

Utilisation of Operating Experience in the Regulatory Inspection Programme and of Inspection Findings and Operating Experience Insights from the Non-conformance of Spare Parts

International Operating Experience
Workshop Appendix
Helsinki, Finland
14-16 June 2011

Compilation of Survey Responses



Unclassified

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**NUCLEAR ENERGY AGENCY
COMMITTEE ON NUCLEAR REGULATORY ACTIVITIES**

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Unclassified

**International Operating Experience Workshop Appendix
on Utilisation of Operating Experience in the Regulatory Inspection Programme and of Inspection
Findings and Operating Experience Insights from the Non-Conformance of Spare Parts**

Working Group on Operating Experience

Appendix: Compilation of Survey Responses

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The mission of the NEA is:

- to assist its member countries in maintaining and further developing, through international co-operation, the scientific, technological and legal bases required for a safe, environmentally friendly and economical use of nuclear energy for peaceful purposes, as well as
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The NEA Data Bank provides nuclear data and computer program services for participating countries. In these and related tasks, the NEA works in close collaboration with the International Atomic Energy Agency in Vienna, with which it has a Co-operation Agreement, as well as with other international organisations in the nuclear field.

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The Committee on Nuclear Regulatory Activities (CNRA) shall be responsible for the programme of the Agency concerning the regulation, licensing and inspection of nuclear installations with regard to safety. The Committee shall constitute a forum for the exchange of information and experience among regulatory organisations. To the extent practical, the Committee shall review developments, which could affect regulatory requirements with the objective of providing members with an understanding of the motivation for new regulatory requirements under consideration and an opportunity to offer suggestions that might improve them or avoid unwarranted disparities among member countries. In particular, it shall review current management strategies and safety management practices and operating experiences at nuclear facilities with a view to disseminating lessons learnt. In alignment with the NEA Strategic Plan, the Committee shall promote co-operation among member countries to use the feedback from this experience to ensure high standards of safety, to further enhance the efficiency and effectiveness of the regulatory process and to maintain adequate infrastructure and competence in the nuclear safety field.

The Committee shall promote transparency of nuclear safety work and open public communication. The committee shall maintain an oversight of all NEA work that may impinge on the development of effective and efficient regulation.

The Committee shall focus primarily on existing power reactors and other nuclear installations and the construction of new power reactors; it may also consider the regulatory implications of new designs of power reactors and other types of nuclear installations. Furthermore, it shall examine any other matters referred to it by the Steering Committee. The Committee shall collaborate with, and assist, as appropriate, other international organisations for co-operation among regulators and consider, upon request, issues raised by these organisations. The Committee shall organise its own activities. It may sponsor specialist meetings and working groups to further its objectives.

In implementing its programme the Committee shall establish co-operative mechanisms with the Committee on the Safety of Nuclear Installations to work with that Committee on matters of common interest, avoiding unnecessary duplications. The Committee shall also co-operate with the Committee on Radiation Protection and Public Health and the Radioactive Waste Management Committee on matters of common interest.

Foreword

This appendix provides the complete compilation of responses received to the questionnaire issued in conjunction with the International Operating Experience Feedback Workshop. The workshop was coordinated by the Working Group on Operating Experience. It was hosted by STUK, the Finnish regulatory authority on 14-16 June 2011 in Helsinki, Finland.

The two workshop topics were:

- Utilisation of operating experience in the regulatory inspection programme and of inspection findings in the operating experience programme.
- Operating experience and inspection insights from non-conformance of spare parts.

Due to the unique topics, the members from the Working Group on Operating Experience and the Working Group on Inspection Practices both participated in the workshop.

The questionnaire responses are provided as received, with changes made only to the formatting.

Each of the respondents was given the following instructions in relation to their response:

- Only one response per country is required. If more than one person from your country is participating, please co-ordinate the responses accordingly.
- Please provide responses on separate sheet and clearly identify the questionnaire part and topic.

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TOPIC 1.

**UTILISATION OF OPERATING EXPERIENCE IN THE REGULATORY INSPECTION PROGRAMME
AND OF INSPECTION FINDINGS IN THE OPERATING EXPERIENCE PROGRAMME**

Introduction

Following most major events, lessons learned show that similar events occurred prior to the major event. Further, if the operating experience events or trends were more effectively identified, shared and addressed, many major events may have been avoided. The assessment, communication and effective use of operating experience is without question a critical element to maintain nuclear safety. However, the means and the extent to which operating experience is provided to inspectors and the format used, as well as the expectations for its use by inspectors vary from country to country. Likewise, inspection information supplied into an operating experience feedback programme enhances a regulatory body's efforts to identify and correct trends early. The examination of this diversity of approaches may provide valuable insights for all participants to improve the operating experience programme, inspection programme, and the communication between the two programmes.

Questions

Question 1: Background: Operating Experience to the Inspectors

- A. What types of information on Operating Experience is provided to your inspectors? (e.g., recent operating events, operating experience trends, generic implication based on results of an event assessment).
- B. How do your operating experience personnel provide or transmit the information to the inspectors? (e.g., email, meetings, routine presentations/seminars).
- C. What type of detailed information is included? (e.g., event details, analysis of root cause, identification of generic implications, directions to the inspectors).
- D. Beyond the national operational experience feedback (NOEF) programme, do your inspectors receive operating experience from other sources? (e.g., directly from the OEF local/state programme, from other inspectors, non-nuclear sources) How often do these communications occur? (e.g., informal discussions/word of mouth, Routine internal meetings, seminars or presentations, e-mails, reports or publications).
- E. From the OEF programme point of view, what are inspectors required or expected to do with OEF information?

Question 2: Inspection programmes

- A. From the inspector point of view, how do inspectors use the OEF information?
- B. How does your NOEF programme influence the type of inspections that are performed by the inspectors?
- C. How does your NOEF programme influence or is it involved in developing or writing inspection procedures/guidance?
- D. How (and to whom) do inspectors report the results of their activities related to OEF? Is it required?

Question 3: Inspection feedback to operational experience feedback programmes

- A. How does your NOEF programme receive feedback from the inspectors on the usefulness of the information or suggestions for improvement?
- B. How has/is your NOEF programme improved by the feedback from the inspectors?

Question 4: General

- A. How could your NOEF programme improve its communication with inspectors?
- B. When deciding on what information to send to inspectors, does your NOEF programme consider the ability of inspectors to absorb and take action on OEF? Put another way, do you ensure inspectors (or related specialists) are not overwhelmed by the volume or technical complexity of OEF that is provided?
- C. How does management level interact with or manage operating experience personnel and inspectors to ensure sufficient cooperation?

Belgium

Following most major events, lessons learned show that similar events occurred prior to the major event. Further, if the operating experience events or trends were more effectively identified, shared and addressed, many major events may have been avoided. The assessment, communication and effective use of operating experience is without question a critical element to maintain nuclear safety. However, the means and the extent to which operating experience is provided to inspectors and the format used, as well as the expectations for its use by inspectors vary from country to country. Likewise, inspection information supplied into an operating experience feedback programme enhances a regulatory body's efforts to identify and correct trends early. The examination of this diversity of approaches may provide valuable insights for all participants to improve the operating experience programme, inspection programme, and the communication between the two programmes. The discussion topic will not include security or safeguards issues.

If there is a difference between national and local /state level, please specify.

Question 1. Background: Operating Experience to the Inspectors

A. *What types of information on Operating Experience is provided to your inspectors? (e.g., recent operating events, operating experience trends, generic implication based on results of an event assessment).*

Process is as follows: every event (domestic or foreign, NPP's or not) is evaluated with regards to its potential impact on nuclear safety and radiation protection. Events which have safety relevance or have a potential for lessons learned are identified, and are then put into databases. Most significant (or recurrent) events are then submitted to a deeper analysis from experts. It is important to note that inspectors play an important part in the analysis because of their inherent multidisciplinary approach.

Feedback is addressed to the licensee by the inspectors.

In practice, only few events are submitted for in-depth analysis.

B. *How do your operating experience personnel provide or transmit the information to the inspectors? (e.g., email, meetings, routine presentations/seminars)*

Feedback to inspectors is mainly transmitted throughout emails (or text documents) and during meetings. However, the databases mentioned above can be consulted by the inspectors (and other experts).

C. *What type of detailed information is included? (e.g., event details, analysis of root cause, identification of generic implications, directions to the inspectors).*

For in-depth analysis, every type of information can be included (details, root cause analysis, generic implications, applicability to other installations).

In the databases, one will find a short description of the event. The inputs includes an analysis of the affected systems and of the human and organisational factors, reporting criteria, references,...

D. *Beyond the national operational experience feedback (NOEF) programme, do your inspectors receive operating experience from other sources? (e.g., directly from the OEF local/state programme, from other inspectors, non-nuclear sources) How often do these communications occur? (e.g., informal discussions/ word of mouth, Routine internal meetings, seminars or presentations, e-mails, reports or publications).*

In Belgium, the foreign and domestic operating experience feedback process is described in the same documents, although the functions are fulfilled by different persons.

Apart from the NOEF, operating experience for the inspectors (and other experts) is available from the following sources:

- IRS: Incident Reporting System.
- IRSRR: Incident Reporting System Research Reactors.
- FINAS: Fuel Incident Notification and Analysis System.
- Official publications like USNRC Bulletins, Generic Letters, Orders, Information Notices.
- WGOE reports.
- Any other information can be used on condition that it is issued by a reliable and official source (including quality journals).

E. From the OEF programme point of view, what are inspectors required or expected to do with OEF information?

From the OEF point of view, the role of the inspectors is to feed the OEF team with information (of domestic events mainly, except if Belgian licensees have knowledge of interesting foreign feedback). The inspectors will also be required to do the follow-up of actions undertaken by Regulatory Body towards the licensees. In some cases and as mentioned above, they also actively participate in in-depth analyse (e.g. writing of an IRS, multidisciplinary aspects,...).

Official requests for analysis are issued for important events (for ex. after the FORSMARK July 25 event). The utility's answers are evaluated by a team of specialists.

Question 2. Inspection programmes

A. From the inspector point of view, how do inspectors use the OEF information?

Inspectors use the OEF information on a case-by-case basis. Questions or demands from OEF personnel are taken into account and answered. There is nevertheless room for improvement, especially regarding proactivity from the inspectors.

B. How does your NOEF programme influence the type of inspections that are performed by the inspectors?

The annual inspection programme is among others based on the OEF from previous years. Some specific inspections (beyond the approved annual programme) may of course be performed following specific events.

C. How does your NOEF programme influence or is it involved in developing or writing inspection procedures/guidance?

Up to now, there is only few influence of NOEF programme on the inspection procedures / guidances. In the frame of our ISO 9001 processes, and more specifically the commitment for continuous improvement, we want to develop ourselves in this field.

D. How (and to whom) do inspectors report the results of their activities related to OEF? Is it required?

The results of activities related to OEF are reported by inspectors mainly in their inspection reports. The case being, internal meetings between OEF managers, inspectors and specialists are organized to share information and define the next actions.

Question 3. Inspection feedback to operational experience feedback programmes

A. How does your NOEF programme receive feedback from the inspectors on the usefulness of the information or suggestions for improvement?

Feedback is given on a case-by-case basis. In the frame of our ISO 9001 processes, we strive for an improvement in this field (for instance an increase of the periodical meetings between OEF personnel and inspectors).

B. How has/is your NOEF programme improved by the feedback from the inspectors?

We are still developing our NOEF programme. In the frame of our ISO processes, feedback from the inspectors will of course be taken into account.

Question 4. General

A. How could your NOEF programme improve its communication with inspectors?

Though a systematic exchange between the different parties is described in the process, the reality is not always as evident.

It's the frequency of exchange which seems the most critical point. Moreover, it is sometimes difficult to convince the inspectors of the necessity to feed the domestic events database as the database needs to be fed in order to get some feedback.

B. When deciding on what information to send to inspectors, does your NOEF programme consider the ability of inspectors to absorb and take action on OEF? Put another way, do you ensure inspectors (or related specialists) are not overwhelmed by the volume or technical complexity of OEF that is provided?

Inspectors have an active role in the selection of domestic events that have to be analysed, or even in the analysis itself, thanks to their multidisciplinary character.

In our organization, the volume of information that needs to be provided or handled is a bigger issue than the technical complexity.

C. How does management level interact with or manage operating experience personnel and inspectors to ensure sufficient cooperation?

The management level motivates the operating experience personnel and gets informed on the functioning of the process. However, some reinforcements in operating experience personnel are necessary in order to deliver its full capacity.

Canada

Following most major events, lessons learned show that similar events occurred prior to the major event. Further, if the operating experience events or trends were more effectively identified, shared and addressed, many major events may have been avoided.

The assessment, communication and effective use of operating experience is without question a critical element to maintain nuclear safety. However, the means and the extent to which operating experience is provided to inspectors and the format used, as well as the expectations for its use by inspectors vary from country to country. Likewise, inspection information supplied into an operating experience feedback programme enhances a regulatory body's efforts to identify and correct trends early.

The examination of this diversity of approaches may provide valuable insights for all participants to improve the operating experience programme, inspection programme, and the communication between the two programmes. The discussion topic will not include security or safeguards issues.

If there is a difference between national and local /state level, please specify.

Question 1. Background: Operating Experience to the Inspectors

A. What types of information on Operating Experience is provided to your inspectors (e.g., recent operating events, operating experience trends, generic implication based on results of an event assessment)?

All Canadian NPP licensees are required to report operating event information in accordance with the CNSC Regulatory Standard S-99 – Reporting Requirements for Operating Nuclear Power Plants.

Event information provided by the licensees is coded and input into a centralized event database called CERTS (Central Event Reporting and Tracking System). Approximately 400 event reports are input into the CERTS database every year making it a very important source of Canadian NPP OPEX knowledge.

Both CNSC Site Inspectors (resident inspectors) and CNSC Technical staff located at the CNSC Headquarters have access to CERTS operating event data and can perform OPEX searches or trends as required for the conduct of regulatory work.

Additionally, CNSC Site Inspectors (resident inspectors) also have access to licensee OPEX staff and OPEX databases.

The Senior CNSC Site Inspectors from each NPP Site exchange incoming Canadian OPEX information (licensee issues which may impact other sites and generic technical developments) during a weekly teleconference.

OPEX information resulting from trending or from event assessments by CNSC Technical staff located at the CNSC Headquarters is conveyed to the impacted CNSC NPP Site Office(s) in an ad-hoc manner as appropriate.

Incoming international OPEX information is screened by CNSC Technical staff located at the CNSC Headquarters and then conveyed to the impacted CNSC NPP Site Office(s) in an ad-hoc manner as appropriate.

OPEX information is also presented and discussed at the All-Site Inspector meeting which is held twice a year.

B. How do your operating experience personnel provide or transmit the information to the inspectors (e.g., email, meetings, and routine presentations/seminars)?

OPEX information is usually first discussed in person or by telephone and then followed-up by an e-mail containing all of the relevant technical information.

OPEX information is also presented and discussed in meetings in an ad-hoc manner as appropriate.

C. What type of detailed information is included (e.g., event details, analysis of root cause, identification of generic implications, directions to the inspectors)?

OPEX information conveyed to the impacted CNSC NPP Site Inspectors includes event details, root cause analysis data, and identification of generic implications. Any Directions to the CNSC Site Inspectors is channelled through the appropriate CNSC reporting/organizational structure.

D. Beyond the national operational experience feedback (NOEF) programme, do your inspectors receive operating experience from other sources? (e.g., directly from the OEF local/state programme, from other inspectors, non-nuclear sources) How often do these communications occur? (e.g., informal discussions/ word of mouth, Routine internal meetings, seminars or presentations, e-mails, reports or publications).

As stated above, CNSC Site Inspectors (resident inspectors) have direct access to licensee OPEX staff and OPEX databases.

E. From the OEF programme point of view, what are inspectors required or expected to do with OEF information?

CNSC Site Inspectors are required to review and confirm the relevance of the OPEX information they receive and determine whether the OPEX information applies to the specific facility they are responsible for inspecting. CNSC Site Inspectors are also expected to share OPEX information which may be relevant to other CNSC licensed facilities.

CNSC Site Inspectors are required to ensure relevant and applicable OPEX information is communicated to the licensee and that any required preventive or corrective measure is implemented. This can be done informally for simple items of low safety significance or very formally through written requests and/or orders for complex items of high safety significance.

Question 2. Inspection programmes

A. From the inspector point of view, how do inspectors use the OEF information?

Incoming relevant and applicable OPEX information may have an impact on the compliance activities conducted by the CNSC Site Inspectors. Additional reactive compliance activities may be conducted; these may include reactive inspections, documentation reviews, or changes to the scope of planned or ongoing inspections.

CNSC Site Inspectors ensure the licensee is aware of any relevant incoming OPEX information and that any required preventive or corrective measure is implemented.

B. How does your NOEF programme influence the type of inspections that are performed by the inspectors?

Incoming relevant and applicable OPEX information may have an impact on the type of compliance activities conducted by the CNSC Site Inspectors. Reactive changes in the type of inspections may include a change in inspection method or scope (e.g. changing a documentation inspection for an on-site inspection, changing a limited-scope inspection to a wider-scope inspection). For example, the Fukushima event triggered a review of recent inspection activity surrounding seismic events and spent fuel bay cooling, additional inspections were added to confirm no issues existed in Canada.

C. *How does your NOEF programme influence or is it involved in developing or writing inspection procedures/guidance?*

Incoming relevant and applicable OPEX information may have an impact on the development or revision of the CNSC inspection procedures and guides.

Site specific CNSC inspection guides are reviewed prior to use to confirm the accuracy of their content. Site specific CNSC inspection guides are also reviewed and updated as required on completion of each inspection. Inspection procedure and guide updates which may be required to reflect relevant and applicable OPEX information would be done through these routine reviews.

D. *How (and to whom) do inspectors report the results of their activities related to OEF? Is it required?*

The results of all CNSC site inspections, including those related to OEF, are formally reported to the CNSC Regulatory Program Director who has overall responsibility for the inspected NPP. This is a CNSC internal requirement.

Question 3. Inspection feedback to operational experience feedback programmes

A. *How does your NOEF programme receive feedback from the inspectors on the usefulness of the information or suggestions for improvement?*

CNSC Site Inspectors provide feedback on the OPEX information they received in an ad-hoc manner as appropriate.

B. *How has/is your NOEF programme improved by the feedback from the inspectors?*

CNSC OPEX programme improvements are done in an ad-hoc manner as appropriate.

Question 4. General

A. *How could your NOEF programme improve its communication with inspectors?*

Communication between CNSC Technical staff located at the CNSC Headquarters and CNSC Site Inspectors is generally open and effective.

The CNSC OPEX Programme remains in the development for the time being; communication effectiveness of OPEX information will likely improve when a fully integrated OPEX Programme is developed and implemented.

B. *When deciding on what information to send to inspectors, does your NOEF programme consider the ability of inspectors to absorb and take action on OEF? Put another way, do you ensure inspectors (or related specialists) are not overwhelmed by the volume or technical complexity of OEF that is provided?*

The Senior CNSC Site Inspectors from each NPP Site exchange incoming Canadian OPEX information (licensee issues which may impact other sites and generic technical developments) during a weekly teleconference.

OPEX information resulting from trending or from event assessments by CNSC Technical staff located at the CNSC Headquarters is conveyed directly to the Site Supervisor who has the level of technical expertise and ability required to absorb and take action as appropriate. Additionally, Technical staff located at the CNSC Headquarters remain available to provide technical support or clarification to the Site Inspectors should it be required.

C. How does management level interact with or manage operating experience personnel and inspectors to ensure sufficient cooperation?

Cooperation between CNSC Technical staff located at the CNSC Headquarters and CNSC Site Inspectors is generally open and effective and does not usually require any CNSC management interaction.

CNSC management involvement may occasionally be required to delineate and/or prioritize follow-up compliance enforcement activities which may be required. The CNSC Regulatory Program Director for the impacted NPP has ultimate responsibility in this area.

Czech Republic

Question 1. Background: Operating Experience to the Inspectors

- 1. *What types of information on Operating Experience is provided to your inspectors? (e.g., recent operating events, operating experience trends, generic implication based on results of an event assessment)***

SUJB is a small regulatory body. This allows inspectors to participate in OEF programme directly as specialists. For that reason, inspectors are provided with all information (i.e. recent operating events, operating experience trends, and generic implication based on results of an event assessment).

- 2. *How do your operating experience personnel provide or transmit the information to the inspectors? (e.g., email, meetings, routine presentations/seminars)***

Inspectors receive emails on a routine basis.

Furthermore, they do have permanent access to database of all events.

- 3. *What type of detailed information is included? (e.g., event details, analysis of root cause, identification of generic implications, directions to the inspectors)***

Inspectors receive full information, i.e. event details, analysis of root cause, identification of generic implications, and directions to the inspectors as well.

- 4. *Beyond the national operational experience feedback (NOEF) programme, do your inspectors receive operating experience from other sources? (e.g., directly from the OEF local/state programme, from other inspectors, non-nuclear sources) How often do these communications occur? (e.g., informal discussions/ word of mouth, Routine internal meetings, seminars or presentations, e-mails, reports or publications)***

Inspectors may receive information on events from IRS. For this purpose, a preliminary database has been created. However, the information is not transmitted systematically yet.

Operating experience from other sources is gathered through informal discussions. This communications occur occasionally.

- 5. *From the OEF programme point of view, what are inspectors required or expected to do with OEF information?***

Inspectors participate in OEF programme directly. Therefore, they are required to review whether event analysis is correct (including identified root causes) and whether appropriate corrective actions were addressed.

Consequently, inspectors are expected to use OEF information in their particular area during inspections. Moreover, inspectors may take part in assessments (e.g. PSR) where OEF information is useful as well.

Question 2. Inspection programmes

- 1. *From the inspector point of view, how do inspectors use the OEF information?***

Inspectors are expected to modify their inspection plan on the grounds of OEF outputs. Individual differences among inspectors can be observed in this activity, e.g. physical verification of corrective actions realization is not obligatory for inspectors in general.

2. *How does your NOEF programme influence the type of inspections that are performed by the inspectors?*

Reactive inspections can be started in consequence of OEF findings.

3. *How does your NOEF programme influence or is it involved in developing or writing inspection procedures/guidance?*

Inspection procedures/guidance are occasionally modified on the grounds of OEF outputs.

4. *How (and to whom) do inspectors report the results of their activities related to OEF? Is it required?*

The results are stated in inspections reports. Naturally, it is required.

Question 3. Inspection feedback to operational experience feedback programmes

1. *How does your NOEF programme receive feedback from the inspectors on the usefulness of the information or suggestions for improvement?*

As inspectors participate in OEF programme they can address their suggestions directly. However, this does not occur in a systematic way.

2. *How has/is your NOEF programme improved by the feedback from the inspectors?*

To be honest, such feedback did not occur so far, nevertheless it is welcomed to occur.

Question 4. General

1. *How could your NOEF programme improve its communication with inspectors?*

In addition to regular emails, a presentation of interesting events could be held on regular basis.

2. *When deciding on what information to send to inspectors, does your NOEF programme consider the ability of inspectors to absorb and take action on OEF? Put another way, do you ensure inspectors (or related specialists) are not overwhelmed by the volume or technical complexity of OEF that is provided?*

As stated above, the inspectors have full OEF information. In order to prevent inspectors from volume/technical overwhelming, the information is pre-screened by OEF coordinator so that inspectors receive information specifically related to their specialization. Concerning the complexity, inspectors always have possibility to discuss the issue with a focus group that deals with the event. The same applies for IRS preliminary database.

3. *How does management level interact with or manage operating experience personnel and inspectors to ensure sufficient cooperation?*

OEF personnel and inspectors are not separated groups (see answer to Question 1.1). For this reason, insufficient cooperation support is currently not at stake.

Finland

Question 1. Background: Operating Experience to the Inspectors

F. What types of information on Operating Experience is provided to your inspectors? (e.g., recent operating events, operating experience trends, generic implication based on results of an event assessment)

- Requirements and criteria for Licensees' reporting to STUK on events and on plant operation are presented in the regulatory requirements YVL Guides 1.5 *Reporting nuclear power plant operation to the Radiation and Nuclear Safety Authority* and 1.11 *Nuclear power plant operational experience feedback*.
- Licensees send event reports, and annual reports on the utilization of OE (from internal and external sources) in paper form. Daily reports and quick information for questions are sent by email.
- Event reports received from the plants are put into STUK's Document Management System (DOHA). The inspector responsible for coordinating the review of national OE reports at STUK sends by email a link on recent reports to all inspectors.
- All the reported events are available in STUK's intranet on the page of oversight of NPPs.
- Incidents and failures in equipments and systems having nuclear safety importance, minor deficiencies in periodic tests, and near misses as well as other low level events are normally reported in weekly reports by resident inspectors.
- STUK encourages all its inspectors making inspections on-site (e.g. oversight during outages) to pay attention to unusual phenomena and to openly report all safety significant observations, including errors made in own work.
- STUK has a Safety Performance Indicator (SPI) system for NPPs containing over 50 individual indicators for each plant unit describing the performance of the plant. The areas under consideration are 1) safety and quality culture, 2) operational events, and 3) structural integrity. These three areas are divided into a total of 14 sub-areas to be interpreted. The first area illustrates the condition of the plant and performance of different functional groups of the plant; as maintenance, operation, radiation protection, quality management, and attitudes to safety as well. Indicators in the second area describe specially operation and the performance of operation unit through events, their risk-significance and direct causes of events. In the third safety performance indicator area, the integrity and leak tightness of multiple barriers (fuel, primary circuit, secondary circuit, containment) are monitored.
- SPI system is maintained and coordinated by the office of operation (KÄY) of Nuclear Reactor Regulation (NRR) department of STUK. The NRR has assigned persons that are responsible for the acquisition of the indicator data, their calculation, analyses and trending. Indicator data is maintained in STUK's INDI (INDicator DISPLAY) system.
- Information on operating events abroad are received directly or in regular meetings (twice a year) from regulatory bodies in the countries with similar kind of NPPs as in Finland (BWRs/Sweden and VVERs/Russia, Hungary) and through STUK's duty system is distributed to experts and OEF staff for review and assessments and/or for information. Finland and Russia have bilateral cooperation where operational experiences of Kola, LAES and Loviisa NPP are reported twice a year. OEF personnel has regular meetings with the Swedish regulatory body, SKI, exchanging information and experience on events at Olkiluoto NPP and Swedish NPPs.
- Information on event or OE and on research results received in international meetings of IAEA (IRS) and OECD/NEACNRS and CSNI is transmitted in travelling reports to all inspectors and related presentations to technical experts. Information is available for all inspectors in STUK's Document Management System (DOHA).

- For distribution, review and assessment of OE notifications and OE reports received through IAEA NEWS and IRS there are separate process (look answer 1D).

G. *How does your operating experience personnel provide or transmit the information to the inspectors? (e.g., email, meetings, routine presentations/seminars)*

- Licensees provide OE information to STUK in reports, letters, emails, inspections and meetings.
- The resident inspectors inform management and inspectors of Nuclear Reactor Regulation (NRR) about operational disturbances as well as about safety significant events or incidents immediately by phone call (during office hours) and/or by e-mail.
- Events are normally reported in weekly reports of resident inspectors.
- Recent operating events are when necessary discussed in the meetings of operation (OPERA) held every other week at NRR. OPERA meetings are participated by the management of NRR, Heads of technical specific offices and experts (inspectors). Meeting memos are distributed by email to the whole staff of department.
- Selected significant operational events are reported in STUK's Annual and Quarterly Reports on '*the Use of Nuclear Energy in Finland*'. These report act as good collective memory on the events, licensees' and STUK's actions. Reports are available on STUK's public website
- STUK's safety performance indicators are published in appendix 1 of STUK's annual report. on "Regulatory control of nuclear safety in Finland";:
http://www.stuk.fi/julkaisut_maaraykset/tiivistelmat/b_sarja/en_GB.
- Look also at 1A: Intranet, Document Management System.

H. *What type of detailed information is included? (e.g., event details, analysis of root cause, identification of generic implications, directions to the inspectors)*

- YVL Guides 1.5 and 1.11 set forth the requirements and for the contents of operational event reports.
- The event reports (link) are distributed for information for all inspectors. Reports contain the basic information of events. It depends on the severity of the events how detailed the reports are. Reports on safety important events or incidents must include in addition to event description also safety assessment, analyses of causes of the incident, immediate corrective actions and measures to avoid recurrence. Root cause analysis are made of the most complex and safety significant events.
- Event information into STUK's intranet is taken on a standard form containing following fields: name of event (describing name), plant unit(s) in question, time and date of event, event report type/event number, INES-classification, short description of event, causes of even (human/technical failure, faulty performance), preventive and corrective actions at the plant and at the licensee (description, time schedules), safety significance of the event, and text published in STUK's Quarterly Report on the Use of Nuclear Energy in Finland. Word-search is possible at a time on several reports, but the system does not enable any trending because coding of events and their root causes or any contributing factors is not performed as putting events in the storage.

I. *Beyond the national OEF programme, do your inspectors receive operating experience from other sources? (e.g., directly from the operational experience feedback (OEF) local/state programme, from other inspectors, non-nuclear sources) How often do these communications occur? (e.g., informal discussions/ word of mouth, Routine internal meetings, seminars or presentations, e-mails, reports or publications)*

- Look at answers 1A, 1B and 1C.
- All notifications through IAEA NEWS considering NPP events and IRS reports received through IAEA/NEA webbased international reporting system (WBIRS) are immediately reviewed by an IOEF coordinator and relevance assessed if there are concerns or lessons to be discussed or investigated at Finnish plants.

- The processes to review and assess any urgent information and IRS reports are described in the Quality Manual of NRR department. STUK's international OEF group has around 10 rotating experts in different technical disciplines who are responsible for assessment of reports assigned to them. The group has monthly meetings. As needed, the group makes suggestions to the line organization of NRR department for expert review. Based on the expert memos, the group assesses whether there is a need for regulatory or licensee measures on the basis of lessons learned. As needed, the group proposes requests to be made to the licensees on their actions.
- IRS-reports received from IAEA are also stored into STUK's Document Management System (DOHA) in separate folder with related presentations given for example in NC or WGOE meetings and other related documents e.g. reports, memos etc.
- STUK has its own access-based IRS database, where every IRS report is recorded with a short event description (in Finnish), the categorization, justification for STUK's position and summary of actions needed or already performed at Finnish NPPs (in Finnish and in English) for each report categorized to class 1 or higher.
- The list of IRS reports is in intranet. STUK's response on lessons presented in IRS-reports can also be found in intranet (actions in Finland or good practice in Finland in a case an issue had been addressed earlier with proper actions).
- STUK's IOEF group oversees the utilization of international OE by operators through specific inspection of periodic inspection programme (PIP) for operating NPPs. Inspection is focused on the licensees international OEF process but also spot checks are performed to review licensees' actions on certain events or OE

J. From the OEF programme point of view, what are inspectors required or expected to do with OEF information?

- All the event reports are distributed to the experts for regulatory oversight and inspection. Based on the characteristics of the event the report will be inspected by experts with the required competence. They evaluate the further need of requirements. If necessary, further investigations or corrective measures will be required. The follow-up are made by the inspectors.
- STUK performs review of operational event reports/events basically at three different levels: A general review is performed for events, which licensee's event reports are submitted to STUK for information. Such events are; transients, reactor scrams and other events.
- Assessment and analyses of event reports of the events which meet the set criteria for the licensee to submit a special report to STUK for approval may include clarifications at the plant site. Contributing or latent human and organizational factors are determined by special techniques performed by behavioural specialists of NRR.
- Safety significance of operational events is determined by deterministic safety analysis. Risk significance of events is determined using probabilistic safety assessment (PSA) techniques. INES classification made by the licensee is assessed and confirmed.
- STUK assigns its own investigation team for events deemed to have special importance, especially when the licensee's organisation has not operated as planned.
- IOEF reports: look at 1D.

Question 2. Inspection programmes

A. From the inspector point of view, how do inspectors use the OEF information?

- Mainly OEF information brings additional background info to inspectors for focusing on these new or up-to-date issues in their inspections. Additional questions are asked from licensees during inspections.

- Safety Performance Indicator results are used for focusing and optimizing NRR's resources and for focusing safety reviews and inspections of NRR's Periodic Inspection Programme. Declining trends, if showing a degrading trend during two consecutive years, indicate a possible need to enhance the operation and organisational performance of the plant in question and STUK's regulatory efforts in those areas. If a declining trend of one or more indicators is detected the causes are clarified and need for focusing NRR's oversight activities are evaluated. The NRR's regulating action depends on the trend that has been violated and the margin to safety (Legislation; YVL-guides; Tech Spec; Plants' target values; STUK's annual goals, etc.). Increased inspection examines the effectiveness of the licensee's actions to correct the deficiency and also if STUK's own performance has contributed to the degradation.

B. How does your NOEF programme influence the type of inspections that are performed by the inspectors?

Inspection programme is conducted yearly by same routine. Inspections are focused differently every year and events/OE and SPIs have effect on content of the inspections.

C. How does your NOEF programme influence or is it involved in developing or writing inspection procedures/guidance?

The planning of an individual inspection of STUK's Periodic Inspection Programme is done by the inspection group. The leader of the inspection group has the overall responsibility for the planning of the inspection. The formation of the inspection group depends on the topics of the year. In most of the inspections the constant topics have been divided into several years. The annually changing topics depend on the experiences from previous inspections, possible incidents and plant modifications. The inspection group prepares a detailed inspection plan which is then submitted to the licensee for about one month before the inspection.

D. How (and to whom) do inspectors report the results of their activities related to OEF? Is it required?

- The findings and general assessment of the status of the inspection area are presented to the Licensee in an exit meeting in a protocol and in an inspection report.
- The leader of the inspection group presents the findings and the status of the inspection area in the OPERA meeting. The inspection protocol and report are linked into the meeting memo distributed to all inspectors.
- Answers to specific questions raised from IRS-reports are discussed in IRS group and OPERA meetings, and stored in STUK's internal IRS database.

Question 3. Inspection feedback to operational experience feedback programmes

A. How does your NOEF programme receive feedback from the inspectors on the usefulness of the information or suggestions for improvement?

NOEF reports are distributed to all inspectors and reviewed by experts (look at 1E). Inspectors make inspection memorandums during review process and raise additional questions/comments also for NOEF inspectors.

B. How has/is your NOEF programme improved by the feedback from the inspectors?

Follow up of corrective actions is more often taken into considerations during review and inspections.

Question 4. General

D. How could your NOEF programme improve its communication with inspectors?

Some inspectors that are part of NOEF process are the same inspectors who do inspections. Inspectors who do not take part in NOEF process should have more information from NOEF reports and specially on root causes and corrective actions decided.

A. When deciding on what information to send to inspectors, does your NOEF programme consider the ability of inspectors to absorb and take action on OEF? Put another way, do you ensure inspectors (or related specialists) are not overwhelmed by the volume or technical complexity of OEF that is provided?

Most problematic issue is to decide what actions should be taken based on certain OEF. This usually is the question that is faced by inspectors but they also are the best experts to consider OEF information.

B. How does management level interact with or manage operating experience personnel and inspectors to ensure sufficient cooperation?

- Management raises up questions based on important OEF. This gives higher emphasis to OEF and also requires more interaction inside NOEF people.
- Specific events (risen up e.g. in OPERA meetings) that may require regulatory actions are discussed in the meeting of NRR management (director, deputy director and assistant directors) held every other week. The meeting may decide if deeper inspections or any other actions are required before or after the routine reporting of the utilities.

France

DIRECTION DES CENTRALES NUCLEAIRES

Paris, 22nd April 2011

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Subject : WGOE 2011 Workshop Questionnaire

Reference: International Operating Experience Feedback Workshop 14-16 June 2011 – Final announcement

Dear Ms. Jackson,

Please find in annex the WGOE questionnaire completed.

Best regards,

Head of the nuclear power plant department,


Thomas HOUËRE

LISTE DE DIFFUSION

Copies externes :

- IRSN/DSR
- IRSN/DSR/SEREP

Copies internes :

- DCN : J. Husse, D. Krembel, L. Giroud
- DRI
- Division de Lyon : O. Veyret

ANNEX CODEP-DCN-2011-023753
WGOE 2011 WORKSHOP QUESTIONNAIRE

TOPIC 1: Utilising Operating Experience in the Regulatory Inspection Programmes

Question 1: Background: Operating Experience to the Inspectors

A. What types of information on Operating Experience is provided to your inspectors? (e.g., recent operating events, operating experience trends, generic implication based on results of an event assessment)

B. How do your operating experience personnel provide or transmit the information to the inspectors? (e.g., email, meetings, routine presentations/ seminars)

C. What type of detailed information is included? (e.g., event details, analysis of root cause, identification of generic implications, directions to the inspectors)

First of all, it is to be known that in ASN, inspectors may work in the national or in the local level. Local inspectors have information about NPP they control and there is a national OEF unit in the national NPP department which has information about every French NPP. Event notifications and reports are transmitted by the concerned NPP to the regional office of the ASN in charge of its control and to ASN national NPP department.

Local inspectors are in charge of assessing events reported by the licensee on a day-to-day basis. Therefore, inspectors from local units of ASN share between them the operating experience feedback concerning the reactors controlled by the regional office.

1. 2-weeks review

Within the NPP department of ASN, a unit is in charge of assessing the operating experience feedback of the French NPPs. This unit makes twice a month a 2-weeks review of events which occurred 3 months before and for which a report was issued by the licensee. This review contains detailed information on 4 or 5 chosen events and is sent by email to every NPP inspector of the national level and to managers of regional offices inspectors. For each event, detailed information is given about :

- the description of the event (summary) ;
- the causes of the event ;
- issues ;
- corrective actions taken by the licensee ;
- actions to be taken by local inspectors regarding the event ;
- a link to find the complete documents in the database is provided.

The 2-weeks review also contains general information like :

- details about most recent events of interest (level INES 2, immediate actions required, etc.) and trends that can be identified in the event screening time window, like if several events involve the same human factor ;
- ASN national requirements to the licensee regarding the operating experience feedback (when topics of interests rise from the operating experience feedback, projects are set up at the national level) ;
- generic events list and updates in their treatment (see question 1 answer point 6) ;
- international operating experience feedback.

At last during this review, the operating experience feedback unit gives the licensee report and a summary about the relevant events to each project manager of the NPP department. Project managers are therefore informed of the events related to their subjects.

2. Events database

Any inspector and ASN personnel has full access to the ASN database containing every event notified by the licensee, its report and other related documents. Request can be made on multiple criteria to extract events.

3. National networks meetings

Various networks on various topics exist within the ASN. They gather one inspector from each national department concerned and each local unit.

Events are discussed when they are of general interest in the following networks :

- emergency preparedness ;
- environment ;
- radioprotection ;
- pressurized equipments.

Attendants may present events and give their assessment and conclusions to others, suggesting actions to be taken nationally.

On top of that, when local inspectors have questions about events, this leads to discussions with the operating experience feedback unit.

4. ASN-TSO-Licensee quarterly meeting

ASN and IRSN have a quarterly meeting with the licensee to discuss national and international events. After this meeting, the operating experience feedback unit forwards by email to national inspectors the relevant information discussed during these meetings. It mainly consists of details about the progresses of the assessment of events and actions taken by the licensee.

5. International events

One inspector of the operating experience feedback unit is in charge of reviewing international events, monitoring database like the IRS database. When an event is pushed through his monitoring, he analyses the opportunity to inform an inspector of the national level and may forward the information.

6. Generic events

As France has only one licensee operating many similar NPPs, generic events are more easily identified and dealt with. As the result of licensees investigations or discussions between ASN, IRSN and the licensee, generic events are reported "as is" by the licensee and then treated as a project by national inspectors.

The following chart summarizes the answer.

Information kind	Sent by	Recipient : national (N) / local (L) inspector	Format of information	Frequency	Details included
2-weeks review	ASN national OEF Unit of the NPP Dept.	N + L	Email	2 weeks	<ul style="list-style-type: none"> - details concerning 4-5 events which occurred about 3 months before (description, causes, stakes, actions taken in the NPP, suggestions of actions to be taken by ASN local inspectors) ; - list of generic events and updates since last 2-weeks review ; - information about specific recent events of interest ; - information about recent national actions (demands to the licensee, etc.) ; - various information (international OEF, etc.)
Licensee event notification	Concerned NPP licensee	L	Fax	Event occurrence	Description of the event and details in compliance with ASN guidance on event notification
Event report	Concerned NPP licensee	L	Mail	Event occurrence + 2 months	Description of the event and details in compliance with ASN guidance on event reports
Licensee event notification + report	ASN national OEF Unit of the NPP Dept.	N	Fax + Mail	2 weeks	Regarding their subjects, national inspectors receive from the OEF unit these information (hand-to-hand) when the 2-weeks review is issued
Discussions in national networks meetings	National network manager	N + L	Meeting	4 per year	Presentation by local or national inspectors of events of interest + suggestions of action for national and local level
Discussions	Local inspector	ASN national OEF Unit of the NPP Dept.	Email	On demand	Any details necessary in the discussion
ASN events database	/	N + L	Permanent full access	On demand	Events notifications and reports, local inspectors commentaries and remarks

D. Beyond the national operational experience feedback (NOEF) programme, do your inspectors receive operating experience from other sources? (e.g., directly from the OEF local/state programmes, from other inspectors, non-nuclear sources) How often do these communications occur? (e.g., informal discussions/ word of mouth, Routine internal meetings, seminars or presentations, e-mails, reports or publications)

Local inspectors from different regional offices are exchanging information through informal networks built between inspectors in charge of different types of NPPs (900 MWe CP1, 900 MWe CP0, etc.).

Besides, events of importance are discussed in routine internal meetings.

E. From the OEF programme point of view, what are inspectors required or expected to do with OEF information?

Inspectors are expected to be vigilant on points that are brought to their attention and to include some of the actions suggested in their inspection programs. They are also expected to inform national level if problems mentioned in OEF information may be generic, to their knowledge.

Question 2: Inspection programmes

A. From the inspector point of view, how do inspectors use the OEF information?

They pay attention to OEF information during their inspections and check some potential generic aspects of events that have occurred on other NPPs.

They make inspections to verify that the licensee has implemented the corrective actions mentioned in events reports.

Inspectors of the national level gather OEF information related to their subjects to be used :

- when instructing applications of the licensee (knowing what kind of problems were met concerning equipments, etc.) ;
- to issue national requirements to the licensee when the national level of the licensee have to take generic provisions.

B. How does your NOEF programme influence the type of inspections that are performed by the inspectors?

New inspections may be proposed to address the issues raised by OEF when the yearly inspection programme is drafted.

To determine the priorities for inspections, OEF is taken into account : it is examined once a year and then topics of interest are highlighted.

For example, when determining the priorities for inspections in 2011, the review of OEF made in mid-2010 highlighted two specific topics :

- management of “primo-intervenants”, corresponding to the way the licensee takes into account, before and during interventions, personnel who will participate in the kind of intervention for the first time (and therefore is more prone to do mistakes) ;
- transformers fires.

These topics were included in the inspection programs of 2011.

On new topics (compared to inspection program of the year before), briefings are prepared between national ASN inspectors, IRSN and local inspectors who will have to carry out these inspections. Events reports from all French NPPs are examined in these meetings.

On a day-to-day basis, events are included in briefings before inspections. For example, before conducting an inspection on the topic of the maintenance on a specific NPP, events related to maintenance are examined and taken into account into the agenda.

Reactive inspections may be carried out right after events of interest.

At last, OEF related to non conformances is turned into an inspection program to be implemented during reactors outages.

C. How does your NOEF programme influence or is it involved in developing or writing inspection procedures/guidance?

Inspection procedures and guidance are written by national level inspectors who are aware of events related to their subject. OEF is taken into account when writing inspection guidance but not in a formal way.

D. How (and to whom) do inspectors report the results of their activities related to OEF? Is it required?

Every year, a report is made by local ASN inspectors for each NPP. Questions concerning OEF have to be filled. These reports are analysed by national level ASN.

Besides, local inspectors are asked to inform in real time the national OEF unit about events of specific interest which may have generic implications. The information must explain why the event is of specific interest.

There is no additional requirement.

Question 3: Inspection feedback to operational experience feedback programmes

A. How does your NOEF programme receive feedback from the inspectors on the usefulness of the information or suggestions for improvement?

Inspection reports have to feed the OEF.

Parts of them are dedicated to :

- potentially generic findings ;
- reports that can be used in future inspections ;
- recurrence of a non compliance.

When specific aspects (generic or of importance) are noticed during the inspections, local inspectors have to forward their report to the national inspector in charge of the subject.

Feedback from the inspectors on the usefulness of the information or suggestions for improvement are transmitted via the OEF unit email box or discussed during meetings between national and local inspectors. Nothing formal is planned.

B. How has/is your NOEF programme improved by the feedback from the inspectors?

OEF unit examined the suggestions and it is decided whereas to take it into account or not.

The last change of importance is the change of the format of the 2-weeks review in 2009. When asked, local inspectors suggested deep changes in the form of the review. The new form was afterwards found satisfying by local inspectors.

There is a work in progress concerning feasibility of a real time information of local inspectors.

Question 4: General

A. How could your NOEF programme improve its communication with inspectors?

On a national level, OEF unit is composed of inspectors and exchange information hand-to-hand with other inspectors who are not members of the unit. There is not much that could be changed.

The OEF unit could build up a questionnaire to ask inspectors how communication could be improved.

B. When deciding on what information to send to inspectors, does your NOEF programme consider the ability of inspectors to absorb and take action on OEF? Put another way, do you ensure inspectors (or related specialists) are not overwhelmed by the volume or technical complexity of OEF that is provided?

No, it's not taken into account.

National level inspectors (including OEF unit) and local inspectors have approximately the same level of formation. Therefore, it is highly unlikely that the OEF unit would give too complex information to inspectors. Besides, the OEF must (requested by quality insurance) ensure that the information given in the 2-weeks review is clear, concise and understandable.

C. How does management level interact with or manage operating experience personnel and inspectors to ensure sufficient cooperation?

OEF is one of the key processes of the job of inspectors.

Meetings between national and local level are held many times in year. In these meetings, the managers of national and local units meet and discuss the OEF programme.

Inspections often involve the participation of a national level inspectors with the local inspector.

Germany

Following most major events, lessons learned show that similar events occurred prior to the major event. Further, if the operating experience events or trends were more effectively identified, shared and addressed, many major events may have been avoided. The assessment, communication and effective use of operating experience is without question a critical element to maintain nuclear safety. However, the means and the extent to which operating experience is provided to inspectors and the format used, as well as the expectations for its use by inspectors vary from country to country. Likewise, inspection information supplied into an operating experience feedback programme enhances a regulatory body's efforts to identify and correct trends early. The examination of this diversity of approaches may provide valuable insights for all participants to improve the operating experience programme, inspection programme, and the communication between the two programmes. The discussion topic will not include security or safeguards issues.

If there is a difference between national and local /state level, please specify.

Question 1. Background: Operating Experience to the Inspectors

A. What types of information on Operating Experience is provided to your inspectors? (e.g., recent operating events, operating experience trends, generic implication based on results of an event assessment)

In Germany, a comprehensive national operating experience feedback (NOEF) programme is established and provides a lot of information on operating experience to the competent supervisory authorities and their inspectors respectively. The NOEF programme may be summarized as followed:

- Reports by the Incident Registration Centre of the BfS
On behalf of the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), the Incident Registration Centre of the Federal Office for Radiation Protection (BfS) performs a central collection and documentation of information on all reportable events occurred in Germany. The BfS carries out an initial evaluation of the reported events including their categorisation according to the Nuclear Safety Officer and Reporting Ordinance. The database of the reportable events at the BfS is accessible, among others, to the nuclear supervisory authorities of the Länder. Furthermore, the information is published in monthly and annual reports.
- Evaluation of internationally available operating experience by GRS
In addition to the national experience, also internationally available operating experience is utilised intensively in Germany. An important source for safety-related findings from international operating experience is the Incident Reporting System (IRS) of the IAEA and the OECD/NEA. On behalf of the BMU, the events reported are systematically evaluated by the Gesellschaft für Anlagen und Reaktorsicherheit (GRS) regarding potential applicability to German plants. In monthly reports, short descriptions for every IRS event are given and commented regarding applicability to German nuclear power plants. Furthermore, GRS prepares annual reports containing detailed descriptions and evaluations of events of particular significance for German plants. These reports are distributed, among others, to the nuclear supervisory authorities of the Länder.
- GRS information notices (Weiterleitungsnachrichten – WLN)
GRS prepares so called information notices for all those events in German and foreign nuclear power plants where the in-depth analyses show a current or potential significance and applicability to the safety of other plants. On behalf of the BMU, these information notices are submitted, among others, to the supervisory authorities.

Beyond this NOEF programme, a lot of further information on operating experience is provided to the inspectors, mainly in the framework of their own regular supervision work, please see answer to question 1D.

B. How do your operating experience personnel provide or transmit the information to the inspectors? (e.g., email, meetings, routine presentations/seminars)

The information by the NOEF programme is mainly provided in form of written reports and is sent by post or email to the supervisory authorities of the Länder. Within the supervisory authority, the information is forwarded to the individual inspectors, e.g. via email or in electronic folder systems. In addition, regular meetings of inspectors are held, which also cover the exchange of information regarding OEF.

Furthermore, the database of the reportable events of the Incident Registration Centre of the BfS is accessible, among others, to the supervision authorities and their inspectors respectively.

C. What type of detailed information is included? (e.g., event details, analysis of root cause, identification of generic implications, directions to the inspectors)

In the framework of the NOEF programme, the Incident Registration Centre of the BfS carries out an initial evaluation of the reported events including their categorisation to national reporting criteria. Furthermore, all reported events from German NPPs are subject to an in-depth evaluation by a GRS expert team.

In case of special events at nuclear power plants abroad, GRS prepares, on demand of the BMU, statements in a short term on the safety significance and applicability to German nuclear power plants. In case of events that might require immediate action of the authorities, the BMU informs the authorities of the Länder directly.

For all those events, national as well as events from foreign countries, for which the in-depth analyses show a current or potential significance and applicability to the safety of other plants, GRS prepares information notices. They cover a description of the circumstances of the event, the results of the root cause analysis, an evaluation regarding safety significance, a description of the measures taken or planned and, as an essential element, recommendations regarding investigations and, where appropriate, remedial measures to be taken at other plants.

Moreover, GRS performs a generic assessment of German and international operating experience on behalf of the BMU. Safety issues not to be assigned to a single event but to a group of events and generic safety issues arising from an event are subject to an in-depth analysis. The results and conclusions from the generic assessments are documented in reports being distributed in the same way as the information notices. The generic evaluations also include systematic precursor analyses.

D. Beyond the national operational experience feedback (NOEF) programme, do your inspectors receive operating experience from other sources? (e.g., directly from the OEF local/state programme, from other inspectors, non-nuclear sources) How often do these communications occur? (e.g., informal discussions/ word of mouth, Routine internal meetings, seminars or presentations, e-mails, reports or publications)

Beyond the NOEF programme, the inspectors receive operating experience feedback mainly in the framework of their own regular supervision work by the operator:

- In-depth investigation of reportable events in the NPPs of the respective *Land* (Federal State).
- Information about findings from the plant below the reporting threshold.
- Results of evaluations of events from other NPPs (including e.g. WANO).
- Written operating reports at regular intervals, e.g. monthly or yearly reports, including data on the operation history, on inspection and maintenance measures, on radiation protection etc.
- Findings from in-service inspections.
- Results of reviews and audits.
- Report on the operational management and operating experience as part of the (periodic) safety review.

Beside the information from the operator discussed above, the supervisory authority and their inspectors respectively receive also information from their own supervisory work (including visits and audits) as well as from their expert organisations, which are also involved in the inspection of other NPPs. Therefore, they have a broad knowledge about operating experience in NPPs and check if findings are applicability to the other

facilities to be supervised. They inform, when necessary, the supervisory authority and their inspectors respectively by means of recommendations.

In addition, the supervisory authority receives data from the remote monitoring system for NPPs (Kernkraftwerks-Fernüberwachungssystem – KFÜ). The KFÜ data network transmits directly operational and radiation monitoring data from the instrumentation of the NPP to the supervisory authorities.

Furthermore, mainly to ensure cooperation between the Federal and the Länder authorities, a permanent Federation-Länder Committee for Nuclear Energy (LAA) was established. In one of its Working Groups, called Supervision of NPP Operation, a comprehensive information exchange about operating experience takes place.

E. From the OEF programme point of view, what are inspectors required or expected to do with OEF information?

In the case of information provided by the NOEF programme, e.g. GRS information notices, each plant operator has to prepare comments. These comments comprise especially the applicability to its own plant and the implementation of the recommendations. The comments are evaluated by the supervisory authority and their authorized experts. If necessary, additional investigations or remedial measures and precautions are stipulated by the supervisory authority. The inspectors have to supervise whether all measures are implemented by the operator correctly. From the NOEF programme point of view, it is requested that the supervisory authorities and their inspectors respectively provide a plant specific feedback, which is collected by GRS on behalf of the BMU.

Question 2. Inspection programmes

A. From the inspector point of view, how do inspectors use the OEF information?

From the inspector point of view, the information provided by the NOEF programme is very helpful. The information itself, e.g. GRS information notices, is the basis for the comments to be delivered by the operator. The information and the comments by the operator are evaluated by the inspectors, assisted by their authorized experts. A central topic is the assessment, if the conditions and lessons learned are applicable to the plant to be inspected. If so, the inspectors review if the recommendations are implemented and, if necessary, additional investigations have to be made or remedial measures and precautions have to be taken by the operator.

B. How does your NOEF programme influence the type of inspections that are performed by the inspectors?

After receipt and evaluation of all information provided by the NOEF programme, the supervisory authority establishes, if necessary, further remedial measures and precautions to be taken after thorough discussion with the operator. Furthermore, this may also result in additional or special inspections, reviews, audits or supervisory visits by the inspectors, as well as in modifications of the inspection program.

C. How does your NOEF programme influence or is it involved in developing or writing inspection procedures/guidance?

Primarily, the information provided by the NOEF programme has an impact, if applicable, to the operating procedures of the respective facility, e.g. the operating manual or the testing manual. The supervisory authority checks whether the operator has implemented the lessons learned in his documents and procedures. In single cases, NOEF has also influence in the written inspection procedures. Furthermore, if necessary in general topics, the information may also influence national nuclear safety regulations.

D. How (and to whom) do inspectors report the results of their activities related to OEF? Is it required?

In the case of findings in the NPPs, the supervisory authority is informed by the operator and it is determined whether the finding is reportable. If so, the supervisory authority is required to transmit the event reports to the BMU, and in parallel to the Incident Registration Centre of the BfS and the GRS.

In the case of GRS information notices, it is required to give a plant specific feedback to GRS, which collects it on behalf of the BMU.

Events of generic or fundamental significance are also discussed in the respective committees, e.g. the Working Group Supervision of NPP Operation of the LAA or the Reactor Safety Commission (RSK), an advisory body of the BMU.

Inspection findings below the reporting threshold are communicated within the respective supervisory authority.

Question 3. Inspection feedback to operational experience feedback programmes

A. How does your NOEF programme receive feedback from the inspectors on the usefulness of the information or suggestions for improvement?

Please see the answer to question 2D. Especially in the case of GRS information notices, the NOEF programme receives plant specific feedbacks in written form from the supervisory authorities and their inspectors respectively. Furthermore, a feedback is given in the framework of the respective committees and by direct personal communication.

B. How has/is your NOEF programme improved by the feedback from the inspectors?

On behalf of the BMU, the GRS collects the plant specific feedbacks to the information notices from the supervisory authorities and their inspectors respectively. Based on this feedback, GRS prepares an assessment with particular regard of additional findings. These findings, again, are usually made available to the supervisor authorities and their inspectors respectively, generally in annual reports. In principle, the improvement of the NOEF programme by the feedback of the supervisory authorities and their inspectors respectively is a permanent process.

Question 4. General

A. How could your NOEF programme improve its communication with inspectors?

The communication between the NOEF programmes and the inspectors may be further improved by all modern means of communication, e.g. email and in particularly web served databases. Furthermore, in case of evaluation operating events from foreign facilities, a greater amount of information translated into German might be helpful for the inspectors.

B. When deciding on what information to send to inspectors, does your NOEF programme consider the ability of inspectors to absorb and take action on OEF? Put another way, do you ensure inspectors (or related specialists) are not overwhelmed by the volume or technical complexity of OEF that is provided?

As described particularly in the answer to question 1A, the German NOEF programme is based mainly on three parts. In principle, it is a complex system of information, but each part is organized as useful and clear as possible:

- Reports by the Incident Registration Centre of the BfS
The Incident Registration Centre of the BfS performs a central collection and documentation of information on all reportable events occurred in Germany. For clearness, the respective database and the reports contain an overview list to give just an outline about the reportable events, followed by more detailed information in the background.
- Evaluation of internationally available operating experience by GRS
In addition to the national experience, also internationally available operating experience is utilised intensively in Germany. However, GRS reports only about events of particular significance for German plants.

– GRS information notices

Information notices are prepared only for those events in German and foreign nuclear power plants where the in-depth analyses of GRS show a high degree of current or potential significance and applicability to the safety of other plants in Germany.

C. How does management level interact with or manage operating experience personnel and inspectors to ensure sufficient cooperation?

As discussed already in some answers above, the processes and the communication between the NOEF programme and the supervisory authorities and their inspectors respectively are formalized to a large extent. The management of these processes and the communication is conducted in particular by the Federation-Länder Committee for Nuclear Energy.

Within the supervisory authorities, there are also formalized processes to manage the communication and interaction between the operating experience personnel and the inspectors. In practice most of the inspectors are also involved in the OEF process. In addition to formalized processes, direct oral communication between persons involved is necessary and helpful. The management level in the supervisory authority is responsible for supervision and control of these processes.

Hungary

Following most major events, lessons learned show that similar events occurred prior to the major event. Further, if the operating experience events or trends were more effectively identified, shared and addressed, many major events may have been avoided. The assessment, communication and effective use of operating experience is without question a critical element to maintain nuclear safety. However, the means and the extent to which operating experience is provided to inspectors and the format used, as well as the expectations for its use by inspectors vary from country to country. Likewise, inspection information supplied into an operating experience feedback programme enhances a regulatory body's efforts to identify and correct trends early. The examination of this diversity of approaches may provide valuable insights for all participants to improve the operating experience programme, inspection programme, and the communication between the two programmes. The discussion topic will not include security or safeguards issues.

If there is a difference between national and local /state level, please specify.

Question 1. Background: Operating Experience to the Inspectors

A. What types of information on Operating Experience is provided to your inspectors? (e.g., recent operating events, operating experience trends, generic implication based on results of an event assessment)

Licensee reports operational events in accordance with Nuclear Safety Code Volume No.1.

Person of Duty shares all reported information about event on the next Morning Management Meeting, where the type of investigation and proactive inspection is decided.

Licensees are required to send event investigation reports within 30 days after events. The form and content of these reports are very close to IRS report. All event reports are uploaded to the event database. Every inspector has access to the database.

Trends can be produced in the database also.

Detailed evaluation of the Licensee's safety performance is prepared and reported annually by OPEX group. There are annual trends and assessment of events. This report also available for every inspector and Licensees also.

B. How do your operating experience personnel provide or transmit the information to the inspectors? (e.g., email, meetings, routine presentations/seminars)

Prompt information is provided on phone, fax and E-mail. Information is distributed and discussed on daily and monthly meeting. Technical experts are involved in the investigation or the assessment of event from inspector side.

C. What type of detailed information is included? (e.g., event details, analysis of root cause, identification of generic implications, directions to the inspectors)

We collect all kind of information related to events in the event database (event description, event assessment, causes, corrective actions, regulatory action, status of actions)

D. Beyond the national operational experience feedback (NOEF) programme, do your inspectors receive operating experience from other sources? (e.g., directly from the OEF local/state programme, from other inspectors, non-nuclear sources) How often do these communications occur? (e.g., informal discussions/ word of mouth, Routine internal meetings, seminars or presentations, e-mails, reports or publications)

IRS, IRSRR, FINAS, Clearinghouse quarterly reports, Licensee experiences, lessons learned from IRS and WANO.

E. From the OEF programme point of view, what are inspectors required or expected to do with OEF information?

The inspectors take part in the OEF program directly. The main requirement on inspection is the data collection related to the events to identify or to validate causes, problems and check the status of corrective actions.

Question 2. Inspection programmes

A. From the inspector point of view, how do inspectors use the OEF information?

Trend, significant event or international questioner can be input to inspection. OEF information is one input for inspection case by case.

B. How does your NOEF programme influence the type of inspections that are performed by the inspectors?

OEF is a major contributor for the annual inspection plan. OEF group suggest target inspections based on annual evaluation.

C. How does your NOEF programme influence or is it involved in developing or writing inspection procedures/guidance?

HAEA has ISO9000 system. Theoretically every inspector can suggest modification to procedures or guidelines. A new inspection program, which will use the significant information more effectively, is under development now.

D. How (and to whom) do inspectors report the results of their activities related to OEF? Is it required?

Inspectors prepare written report about inspection where they can suggest some action related to OEF findings.

Question 3. Inspection feedback to operational experience feedback programmes

A. How does your NOEF programme receive feedback from the inspectors on the usefulness of the information or suggestions for improvement?

Usually the personal contact and discussion is the way to get feedback from inspectors.

B. How has/is your NOEF programme improved by the feedback from the inspectors?

There is no feedback on systematic way.

Question 4. General

A. How could your NOEF programme improve its communication with inspectors?

I think more and more information is available for inspector in or NOEF program. Many reports, presentations, summaries, e-mails are distributed. But it is a challenge the effective use of information and the effective communication.

B. When deciding on what information to send to inspectors, does your NOEF programme consider the ability of inspectors to absorb and take action on OEF? Put another way, do you ensure inspectors (or related specialists) are not overwhelmed by the volume or technical complexity of OEF that is provided?

The NOEF takes into account the competence and expertise of the inspectors during sending information or event assessment. If necessary, a team of regulatory experts get the task to assess the information. The team may involve an expert from out of the regulatory body.

C. How does management level interact with or manage operating experience personnel and inspectors to ensure sufficient cooperation?

There is formally direct link between management and the OE personnel: morning management meeting, (monthly) technical meeting.

In case of important experience, an assessment team made up of OE personnel and inspectors is established and leaders of OE personnel and inspectors discuss the necessary regulatory actions.

India

Question 1. Background: Operating Experience to the Inspectors**A. *What types of information on Operating Experience is provided to your inspectors? (e.g., recent operating events, operating experience trends, generic implication based on results of an event assessment)***

It may be noted that In India, we do not have resident inspectors. The detailed inspections are carried out every six month by a team formed by the regulatory body, consisting of its regular employees who are involved in all routine regulatory activities pertaining to the NPPs.

An identified group in the regulatory body is responsible for review of events (both national and international), which are relevant to the operating NPPs in India. The events are screened, reviewed and discussed by the group and important observations and recommendations resulting from the review are communicated to the inspectors and also the NPPs for necessary actions. In addition, issues and topics that have relevance to regulatory inspection are also discussed during divisional meetings in the regulatory body where inspectors participate.

The reports of the events/significant events, plant performance reports, health physics reports, safety proposals for modifications & related information is made available to all the inspectors. The inspectors also participate in the deliberations of plant safety committees and are aware of the events, the assessments carried out and the related operating experience.

B. *How do your operating experience personnel provide or transmit the information to the inspectors? (e.g., email, meetings, routine presentations/seminars)*

The information on the events/significant events is provided in the form of written reports (E-mail, hard copies) by the utility. These are reviewed by the OE group and shared with inspectors through meetings within the regulatory body. As a part of the multi stage review process, the regulatory body also conducts meetings, where presentations are made by the utility on the information under review and the inspectors are involved in these meetings.

C. *What type of detailed information is included? (e.g., event details, analysis of root cause, identification of generic implications, directions to the inspectors)*

Event reports submitted to the regulatory body by the utility which are shared with the inspectors include event description, safety assessment, root cause analysis, lessons learnt and corrective actions.

D. *Beyond the national operational experience feedback (NOEF) programme, do your inspectors receive operating experience from other sources? (e.g., directly from the OEF local/state programme, from other inspectors, non-nuclear sources) How often do these communications occur? (e.g., informal discussions/ word of mouth, Routine internal meetings, seminars or presentations, e-mails, reports or publications)*

The regulatory body receives information on the international operating experience from IAEA-IRS and through its regular interaction with CANDU senior regulators forum, VVER regulators forum, US-NRC, ASN France and NEA. The internal discussion meetings are regularly organized in the regulatory body for sharing of the information received from various sources.

E. *From the OEF programme point of view, what are inspectors required or expected to do with OEF information?*

The inspectors are expected to scrutinize the information received from various sources from the point of view of the applicability of the lessons learnt in the context of the plants to be inspected, share the information and communicate the expectations of the regulatory body to the plant management.

Question 2. Inspection programmes

A. From the inspector point of view, how do inspectors use the OEF information?

The information obtained through various means as indicated is utilized during regulatory inspection of the NPPs. Field checks are carried out during inspections for compliance with the recommendations arising out of review of the OEF information. Any significant observations made in one NPP are also looked into in other NPPs during their inspections.

B. How does your NOEF programme influence the type of inspections that are performed by the inspectors?

The OEF programme generally identifies potential focus areas, which are included in the routine inspections. Sometimes, special inspections are also conducted based on OEF information and also to witness identified important activities during planned maintenance outages.

C. How does your NOEF programme influence or is it involved in developing or writing inspection procedures / guidance?

The regulatory body has a manual for inspection on NPPs. This manual is revised by incorporating operating experience.

D. How (and to whom) do inspectors report the results of their activities related to OEF? Is it required?

The reports of the inspections, including the results of their activities relating to OEF, are required to be submitted to the regulatory body and the utility. In addition, the important observations made during inspections in the area of OE are shared during sectional / safety committee meetings and are also taken up for review in the OEF group in the regulatory body.

Question 3. Inspection feedback to operational experience feedback programmes

A. How does your NOEF programme receive feedback from the inspectors on the usefulness of the information or suggestions for improvement?

On completion of the regulatory inspection, the team gives a feedback to the plant management in a meeting specially arranged for this purpose. A detailed report is then prepared incorporating observations / suggested improvements and submitted to the regulatory body and the utility. This report is made available to the OE groups at NPP and the regulatory body.

B. How has/is your NOEF programme improved by the feedback from the inspectors?

The practice of involving inspection team members in the OE group has helped maintain a continuity of awareness and knowledge of the personnel carrying out these activities. The information gathered during the inspections has become an important input for the OE group deliberations and reviews. The benefits are apparent in day to day regulatory interactions.

Question 4. General

A. How could your NOEF programme improve its communication with inspectors?

As per the existing arrangement, most of the lead inspectors are also the members of the OE group. Therefore, interaction between the two functional requirements has remained smooth and no communication issues have been experienced.

B. When deciding on what information to send to inspectors, does your NOEF programme consider the ability of inspectors to absorb and take action on OEF? Put another way, do you ensure inspectors (or related specialists) are not overwhelmed by the volume or technical complexity of OEF that is provided?

In India, NPPs of different types (PHWR, BWR) and vintage are in operation. The OE programme receives inputs from all these and also from other types internationally. The issue of capability of the Inspectors to absorb all the OE information is well recognized. This is addressed to some extent by ensuring that the inspection team for a particular type of NPP comprises persons having relevant experience. The inspectors are also encouraged to develop specialization in particular areas like operation, maintenance, In-service inspection, radiological protection etc. In case of specific requirement, technical experts from the relevant field may be involved in assisting the inspectors. This enables the inspectors to grasp the pertinent information like lessons learnt, corrective actions etc, which may be useful during inspections.

C. How does management level interact with or manage operating experience personnel and inspectors to ensure sufficient cooperation?

The lead inspectors and OE group persons belong to the same division in the regulatory body. The interaction with management is on a continuous basis and there is sufficient co-operation between the groups.

Japan

Following most major events, lessons learned show that similar events occurred prior to the major event. Further, if the operating experience events or trends were more effectively identified, shared and addressed, many major events may have been avoided. The assessment, communication and effective use of operating experience is without question a critical element to maintain nuclear safety. However, the means and the extent to which operating experience is provided to inspectors and the format used, as well as the expectations for its use by inspectors vary from country to country. Likewise, inspection information supplied into an operating experience feedback programme enhances a regulatory body's efforts to identify and correct trends early. The examination of this diversity of approaches may provide valuable insights for all participants to improve the operating experience programme, inspection programme, and the communication between the two programmes. The discussion topic will not include security or safeguards issues.

If there is a difference between national and local /state level, please specify.

Question 1. Background: Operating Experience to the Inspectors

A. What types of information on Operating Experience is provided to your inspectors? (e.g., recent operating events, operating experience trends, generic implication based on results of an event assessment)

Domestic information

Operating status of NPP is reported daily to the inspectors at their local office from the licensee. In this report, noncompliance incidents are also included. Especially, the noncompliance incidents are also reported in parallel to Inspection Division of NISA head office of the inspectors from the utility. And annual operating status and the trending status are reported as documents for the licensee's management reviews. In addition, the trouble press releases, INES evaluation results, operating status reports to the Nuclear Safety Committee, notifications to the utilities and other reporting request letters to the licensee by NISA, are also provided to the inspectors.

Overseas information

The information discussed at the Safety Information Review Meeting by NISA and JNES, and the status/results of the important issues subject for the investigation are also provided to the inspectors through Nuclear Power Inspection Division of the head office, as well as Nuclear Safety Regulatory Standard Division, Nuclear Power Licensing Division and Nuclear Emergency Preparedness Division. Those overseas information are IRS reports, IAEA INES Reports, NRC information such as Generic Letter, Information Notice, Regulatory Issue Summary and PNO. Also Monthly Overseas Incident Report Summary is provided.

B. How do your operating experience personnel provide or transmit the information to the inspectors? (e.g., email, meetings, routine presentations/seminars)

All of the operating experience information are received from and submitted to the inspectors by the operation management group of Nuclear Power Inspection Division of NISA head office. All of the reportable incidents and noncompliance issues are uploaded on the website, "Inspectors Square" of NISA intranet. Thus the regulatory OEF members, management people and all of the inspectors can share the operating experience information. The information of significantly important issues are reviewed and discussed at the quarterly Safety Management Inspectors Meeting.

Those noncompliance and reportable issues are also reported to the head office of NISA as well as to the local inspectors. Furthermore, the inspector sometimes joins to the utility's operation management meetings and achieves the operating experience information of the plant.

C. *What type of detailed information is included? (e.g., event details, analysis of root cause, identification of generic implications, directions to the inspectors)*

The operating experience information includes the detail of the incident or issue (including chronology for the important issue), the result of the root cause analysis, the countermeasure and similar experiences of the domestic and overseas plants.

Sometimes, Nuclear Power Inspection Division of the head office give orders or notifications directly to the utilities if it considers it is necessary.

D. *Beyond the national operational experience feedback (NOEF) programme, do you inspectors receive operating experience from other sources? (e.g., directly from the OEF local/state programme, from other inspectors, non-nuclear sources) How often do these communications occur? (e.g., informal discussions/ word of mouth, Routine internal meetings, seminars or presentations, e-mails, reports or publications)*

As noted above, all of the reportable incidents and noncompliance issues are uploaded to “Inspectors Square” of the NISA intranet and the information of significantly important issues are reviewed and discussed at the quarterly Safety Management Inspectors Meeting.

The inspectors also have the way to know the OE information by the report of the international conferences, such as IAEA, OECD/NEA and NRC etc. In addition, the inspectors have the way to access to the utilities OE data base “NUCIA”, managed by Japan Nuclear Technology Institute.

E. *From the OEF programme point of view, what are inspectors required or expected to do with OEF information?*

The inspectors are expected to require the utility to take corrective actions to the plant they regulate and to confirm the actions taken by the utility to prevent the recurrences. The inspectors who regulate other plants assure that the operators have taken appropriate actions to prevent similar incident to occur at their plants.

Question 2. Inspection programmes

A. *From the inspector point of view, how do inspectors use the OEF information?*

We do operational safety inspection four times a year. The inspectors select the theme based on the OEF information or utilize them when doing the related inspection referencing them.

B. *How does your NOEF programme influence the type of inspections that are performed by the inspectors?*

We do operational safety inspection four times a year. The inspectors select the theme based on the OEF information or utilize it as reference when doing the related inspections.

C. *How does your NOEF programme influence or is it involved in developing or writing inspection procedures/guidance?*

When the operational safety inspection is done, the inspectors utilize OEF information when they prepare the check sheets which may include the instruction from NISA head office. And other than the inspection, they also utilize OEF information for local patrol inside the plant and oversight the utilities operational activities. Furthermore, in the PSR, OEF feedback status is reviewed.

D. *How (and to whom) do inspectors report the results of their activities related to OEF? Is it required?*

The operational safety inspection result is reported to the Minister of METI (Ministry of Economy, Trade and Industry), as well as to NSC (Nuclear Safety Commission of Japan), as required by the law. The daily patrol results are reported to the general manager of the local inspector office, and to the Director General of NISA if the issue is of significance.

Question 3. Inspection feedback to operational experience feedback programmes

A. *How does your NOEF programme receive feedback from the inspectors on the usefulness of the information or suggestions for improvement?*

Operating Experiences from the inspectors are informed to the director of Inspection Division of NISA head office at the meeting of general managers of local inspection offices and/or the operational safety inspectors meetings.

The director of the Inspection Division of NISA reports them at the Safety Information Review Meeting between NISA and JNES.

B. *How has/is your NOEF programme improved by the feedback from the inspectors?*

An example was to enforce a utility to increase the heat removal capacity of CV AHU at a plant. But there were no experience to amend national OEF program.

Question 4. General

A. *How could your NOEF programme improve its communication with inspectors?*

At the head office, they can follow what the inspectors had recognized at the site on the intranet, and the inspectors can recognize what are the issues at the other plants.

B. *When deciding on what information to send to inspectors, does your NOEF programme consider the ability of inspectors to absorb and take action on OEF? Put another way, do you ensure inspectors (or related specialists) are not overwhelmed by the volume or technical complexity of OEF that is provided?*

As general, an inspector does not do his duties alone. His actions are generally based on the approval and/or decision of the local inspection office, with the communication with NISA head office. Therefore, it is not to give too much burden on an inspector himself. And the technical abilities of inspectors are generally of same level. If any issue is to happen which requires specific knowledge to take actions, the other inspector who has specialty for the issue will advice him. If the issue is of much significance, the staffs of the other local inspection office and/or of the head office will be dispatched to oversight the issue. The typical example is the incidents happened at Kashiwazaki-Kariwa earthquake.

C. *How does management level interact with or manage operating experience personnel and inspectors to ensure sufficient cooperation?*

The important noncompliance issue is disseminated on the intranet and the management level people could identify it at the same time and could give appropriate instruction if necessary. If the issue is of significance, it is reported to the Director of NISA head office at the same time. The general manager of the local inspection offices communicates with the general manager of the NPS and/or its licensed chief reactor operators periodically or as necessary.

Korea

Question 1. Background: Operating Experience to the Inspectors

A. *What types of information on Operating Experience is provided to your inspectors? (e.g., recent operating events, operating experience trends, generic implication based on results of an event assessment)*

Domestic & foreign Events, foreign OE information(e.g, NRC IN, BL, etc), inspection reports, equipment failure report satisfying Techspec. limitation, etc. And IT system that provides OE information to the inspectors is being developed and it is partially in operation.

B. *How do your operating experience personnel provide or transmit the information to the inspectors? (e.g., email, meetings, routine presentations/seminars)*

Information is provided for the inspectors by holding a explanatory meeting on the domestic and foreign significant events (e.g, Fukushima accident) and OE information delivery system using IT technology, such as e-mail and other methods is in the process of developing.

C. *What type of detailed information is included? (e.g., event details, analysis of root cause, identification of generic implications, directions to the inspectors)*

Event analysis report including root cause analysis, similar inspection information and foreign information (issues) according to systems, equipment, and similar NPPs that inspectors are interested in.

D. *Beyond the national operational experience feedback (NOEF) programme, do your inspectors receive operating experience from other sources? (e.g., directly from the OEF local/state programme, from other inspectors, non-nuclear sources) How often do these communications occur? (e.g., informal discussions/ word of mouth, Routine internal meetings, seminars or presentations, e-mails, reports or publications)*

Q1) Yes. Q2) Causal/routine internal meetings by each inspection field, seminars, presentations, e-mails, reports/publication including but not limited to informal discussions/word of mouth

E. *From the OEF programme point of view, what are inspectors required or expected to do with OEF information?*

The inspectors require appropriate, processed, and well-timed information according to their own fields and NPP type rather than the broad OE information.

Question 2. Inspection programmes

A. *From the inspector point of view, how do inspectors use the OEF information?*

The inspectors apply the OE information to the inspections of their own fields and use the OE information for acquisition and application of knowledge.

B. *How does your NOEF programme influence the type of inspections that are performed by the inspectors?*

The OE information about similar/same types of NPPs is reflected in the inspections.

C. *How does your NOEF programme influence or is it involved in developing or writing inspection procedures/guidance?*

The inspection procedures/guidances are revised reflecting the OE information collected from domestic NPPs and foreign countries.

D. How (and to whom) do inspectors report the results of their activities related to OEF? Is it required?

Yes, it is required. The inspectors report their activities related to OEF in inspection reports.

Question 3. Inspection feedback to operational experience feedback programmes

A. How does your NOEF programme receive feedback from the inspectors on the usefulness of the information or suggestions for improvement?

If the inspectors suggest OE information for the NPP safety, it is shared with other NPPs by licensee and fed back.

B. How has/is your NOEF programme improved by the feedback from the inspectors?

Through the annual OEF workshop, RB, licensee, designer, vendors, and other related parties discuss about the NOEF programme. The items from the results of the OEF workshop are reflected in the NOEF programme. Also, the inspectors and others propose improvements of the NOEF programme by informal discussion, word of mouth, and etc.

Question 4. General

A. How could your NOEF programme improve its communication with inspectors?

Annual OEF workshop, informal discussion/word of mouth with inspectors for improving the NOEF programme, and etc.

B. When deciding on what information to send to inspectors, does your NOEF programme consider the ability of inspectors to absorb and take action on OEF? Put another way, do you ensure inspectors (or related specialists) are not overwhelmed by the volume or technical complexity of OEF that is provided?

The ability of inspectors is not considered.

C. How does management level interact with or manage operating experience personnel and inspectors to ensure sufficient cooperation?

The inspectors of the OE department participate in the inspection, cooperate and exchange the OE information/opinions with other inspectors.

Mexico

Following most major events, lessons learned show that similar events occurred prior to the major event. Further, if the operating experience events or trends were more effectively identified, shared and addressed, many major events may have been avoided. The assessment, communication and effective use of operating experience is without question a critical element to maintain nuclear safety. However, the means and the extent to which operating experience is provided to inspectors and the format used, as well as the expectations for its use by inspectors vary from country to country. Likewise, inspection information supplied into an operating experience feedback programme enhances a regulatory body's efforts to identify and correct trends early. The examination of this diversity of approaches may provide valuable insights for all participants to improve the operating experience programme, inspection programme, and the communication between the two programmes. The discussion topic will not include security or safeguards issues.

If there is a difference between national and local /state level, please specify.

Question 1. Background: Operating Experience to the Inspectors

A. *What types of information on Operating Experience is provided to your inspectors? (e.g., recent operating events, operating experience trends, generic implication based on results of an event assessment)*

The operational experience is provided to the inspectors through: Recent operational events (internal and external), operating experience trends and the OE from other countries (mainly from US NRC Generic Communications and from the IAEA)

B. *How do your operating experience personnel provide or transmit the information to the inspectors? (e.g., email, meetings, routine presentations/seminars)*

The operating experience personnel provide the information to the inspectors via intranet mainly. Although, because the Nuclear Safety Division is a small organization (30 persons) some times the operating experience is shared during some informal briefings.

The resident inspector writes a brief description of the event (which is included in CNSNS' internal web) and makes the initial investigation reporting to the supervisors who inform to the rest of the personnel.

If the event is important to safety there is a meeting between OE personnel and inspectors for sharing experiences.

At the monthly meeting the OE supervisor presents the operating experience trend.

The biennial OE report informs about the operating trend and gives some directions to the inspectors

C. *What type of detailed information is included? (e.g., event details, analysis of root cause, identification of generic implications, directions to the inspectors)*

The OE information includes event details, analysis of root cause, identification of generic implications, and corrective actions. Such frame of information provides some directions to the inspectors.

D. *Beyond the national operational experience feedback (NOEF) programme, do your inspectors receive operating experience from other sources? (e.g., directly from the OEF local/state programme, from other inspectors, non-nuclear sources) How often do these communications occur? (e.g., informal discussions/ word of mouth, Routine internal meetings, seminars or presentations, e-mails, reports or publications)*

The CNSNS receive operational experience from other countries mainly from the US NRC' web site (every day), and from other sources as the international meeting from the NEA (WGIP) or from IAEA (one or two times at year)

E. From the OEF programme point of view, what are inspectors required or expected to do with OEF information?

The inspectors are encouraged to verify that the licensee has identified the issues important for safety and that the licensee has implemented the corrective actions as part of the Corrective Action Programme.

Question 2. Inspection programmes

A. From the inspector point of view, how do inspectors use the OEF information?

The inspector uses the OEF information in the elaboration of their check lists, in the base line inspection programme and as a trigger of reactive inspections.

B. How does your NOEF programme influence the type of inspections that are performed by the inspectors?

This information does not modify the base line inspection programme, but it is used for directing these inspections to the branch which has been presented problems during the plant normal operation. If an event impacts the safety the OE information is used to trigger reactive inspections

C. How does your NOEF programme influence or is it involved in developing or writing inspection procedures/guidance?

No, the NOEF doesn't influence or is involved in developing or writing inspections procedures

D. How (and to whom) do inspectors report the results of their activities related to OEF? Is it required?

The inspectors report the results in a written inspection report to the Nuclear Safety Manager of the regulatory body. Then, he sends a copy to the licensee and to the head of assessment department (this person is the supervisor of the OE branch).

Question 3. Inspection feedback to operational experience feedback programmes

A. How does your NOEF programme receive feedback from the inspectors on the usefulness of the information or suggestions for improvement?

The biennial inspection results report informed about the trends and results of the inspections and improvement areas.

B. How has/is your NOEF programme improved by the feedback from the inspectors?

The CNSNS NOEF programme has not been improved by the feedback from the inspectors.

Question 4. General

A. How could your NOEF programme improve its communication with inspectors?

Since 2010 CNSNS has implemented a data base for improving the internal communication, but it is still a pilot programme.

B. When deciding on what information to send to inspectors, does your NOEF programme consider the ability of inspectors to absorb and take action on OEF? Put another way, do you ensure inspectors (or related specialists) are not overwhelmed by the volume or technical complexity of OEF that is provided?

No, the CNSNS does not have any way to measure the ability of inspectors to absorb and take action on OEF

C. How does management level interact with or manage operating experience personnel and inspectors to ensure sufficient cooperation?

There is a monthly meeting for exchange information, and if the event is important to safety there is a meeting between OE personnel and inspectors for sharing experiences. If it is necessary to make a special inspection, both personnel participate in the inspection.

The Netherlands

Following most major events, lessons learned show that similar events occurred prior to the major event. Further, if the operating experience events or trends were more effectively identified, shared and addressed, many major events may have been avoided. The assessment, communication and effective use of operating experience is without question a critical element to maintain nuclear safety. However, the means and the extent to which operating experience is provided to inspectors and the format used, as well as the expectations for its use by inspectors vary from country to country. Likewise, inspection information supplied into an operating experience feedback programme enhances a regulatory body's efforts to identify and correct trends early. The examination of this diversity of approaches may provide valuable insights for all participants to improve the operating experience programme, inspection programme, and the communication between the two programmes. The discussion topic will not include security or safeguards issues.

If there is a difference between national and local /state level, please specify.

Question 1. Background: Operating Experience to the Inspectors

A. What types of information on Operating Experience is provided to your inspectors? (e.g., recent operating events, operating experience trends, generic implication based on results of an event assessment)

Every event (domestic or foreign, NPP's or not) is evaluated with regards to its potential impact on nuclear safety and radiation protection. Events which have safety relevance or have a potential for lessons learned are identified, and are then put into a database. Most significant (or recurrent) events are submitted to a deeper analysis from experts. Inspectors play an important part in the analysis because of their familiarity with the plant. Feedback is addressed to the licensee by these inspectors and assessors of a standing task force of the inspectorate.

The KFD staff has via Internet access to public available information on relevant web pages. Furthermore (travel-) reports, presentations and papers received from international conferences, workshops, meetings etc. are distributed within the nuclear safety department by email and they are available digitally via the Intranet of the Ministry of Infrastructure and Environment. The following sources on recent operating events, operating experience trends and generic implication based on results of an event assessment are available besides others:

- US NRC bulletins.
- US NRC Information Notices.
- US NRC Generic Letters.
- US NRC Regulatory Issue Summaries.
- German Bundesamt für Strahlenschutz and NDKK working group.
- AVN Ariane.
- GRS Weiterleitungsnachrichten.
- Nucnet information.
- International Review Missions.
- Workshops like WGIP and others.
- EU clearinghouse reports.
- Information from the Dutch nuclear operator EPZ about incidents.
- Events reported by INES, IRS, Nuclear facilities (interior and exterior) and literature of other nuclear organizations.
- Events reported by other contacts/organizations (WGIP, WGOE, GRS, etc).
- Exchange of information with other nuclear supervisors or TSO's like FANC, IRSN and GRS.
- Events reported in news media.

If necessary the information is analysed and transferred to the inspectors.

B. How do your operating experience personnel provide or transmit the information to the inspectors? (e.g., email, meetings, routine presentations/seminars)

Feedback to inspectors is mainly transmitted throughout emails (or text documents) and during meetings. However, several international databases (IRS, INES, NUCNET, IRSRR, FINAS) can be consulted by the inspectors (and other experts).

Basically three sources of information on Operating Experience are available:

- 1 Major events reported in news media.
- 2 Events reported by INES, IRS, Nuclear facilities (domestic and foreign) and literature of nuclear organisations.
- 3 Events reported by other contacts/organizations (WGIP, WGOE, GRS, US NRC, STUK, FANC, etc).

When a major event (1) occurs all operating experience personnel and the plant-inspectors of our department are involved in answering questions from Parliament, Minister etc. (could it happen here and if so what would be the possible consequences, etc.). Specific inspections will be held and the results will be reported to Parliament.

Examples: Davis Besse, Forsmark, Krümmel, Barsebäck

Events (2) are discussed within a working group (=standing task force) of our department (=the inspectorate of the Dutch Nuclear Regulatory Body). In this working group operating experience personnel and sometimes plant-inspectors are present. The working group also discusses the operating experience trends of our NPP.

Events (3) are reported in a travel report. The report is distributed by e-mail within our department.

C. What type of detailed information is included? (e.g., event details, analysis of root cause, identification of generic implications, directions to the inspectors)

For in-depth analysis, every type of information can be included (details, root cause analysis, generic implications, applicability to other installations).

In our national database, one finds a short description of the event. The inputs include an analysis of the affected systems and of the human and organizational factors, reporting criteria, references, a.o.

D. Beyond the national operational experience feedback (NOEF) programme, do your inspectors receive operating experience from other sources? (e.g., directly from the OEF local/state programme, from other inspectors, non-nuclear sources) How often do these communications occur? (e.g., informal discussions/ word of mouth, Routine internal meetings, seminars or presentations, e-mails, reports or publications)

See under A and B. Inspectors attend WGIP meetings and follow specific training courses.

E. From the OEF programme point of view, what are inspectors required or expected to do with OEF information?

From the OEF point of view, the role of the inspectors is to feed the OEF team (=standing task force) with information (on domestic events plus Dutch licensees' knowledge of interesting foreign feedback). The inspectors will also be required to do the follow-up of actions undertaken by Regulatory Body towards the licensees. In some cases and as mentioned above, they also actively participate in in-depth analysis (e.g. writing of an IRS, multidisciplinary aspects, reporting to Parliament, etc.). However this process has still to be formalised.

Question 2. Inspection programmes

A. From the inspector point of view, how do inspectors use the OEF information?

Inspectors use the OEF information on a case-by-case basis. Questions or demands from OEF personnel are taken into account and answered. There is nevertheless room for improvement, especially regarding proactivity from the inspectors and feedback from the assessors. The plant-inspectors have access to OE information (see answers to questions 1 A/B). If there is relevant information the inspector can search for that information and take it into account during the inspections. However this requires active search from the inspector and usage and usefulness of OE information for site inspections is limited by the number of site inspections done, the time that is available per site inspection and the number and priority of other topics which also have to be covered during site inspections.

B. How does your NOEF programme influence the type of inspections that are performed by the inspectors?

No major changes in the NOEF programme have occurred. The annual inspection programme is (among others) based on the OEF from previous years. Some specific inspections (beyond the approved annual programme) will be performed following specific events (see question 1B). Multidisciplinary team inspections and safety culture audits are increasing in frequency.

C. How does your NOEF programme influence or is it involved in developing or writing inspection procedures/guidance?

In the past 15 years the inspection procedures/guidance have not changed. Up till now, there is only limited influence of our NOEF programme on the inspection procedures / guidances. In the frame of our (at present dormant) ISO 9001 processes, and more specifically the commitment for continuous improvement, we will have to put more effort into this. The QA-programme of the nuclear safety department is recently in revision. Among other topics, the influence of OE on the inspection procedures and guidance's will be reviewed during that process.

D. How (and to whom) do inspectors report the results of their activities related to OEF? Is it required?

From each inspection a report is made by the inspector. The report is distributed within the department by e-mail (see answer 1B). If a special inspection is held in the area of event-investigation the inspector and a member of the operating experience personnel work closely together (for example Forsmark-event). Internal meetings between managers, inspectors and specialists are organised to share information and define actions if necessary.

Question 3. Inspection feedback to operational experience feedback programmes

A. How does your NOEF programme receive feedback from the inspectors on the usefulness of the information or suggestions for improvement?

Feedback is given on a case-by-case basis. In the frame of our (at present dormant) ISO 9001 processes, we strive for an improvement in this field (for instance an increase of the periodical meetings between OEF personnel and inspectors and greater standing task group involvement of the inspectors).

B. How has/is your NOEF programme improved by the feedback from the inspectors?

We are still developing our NOEF programme. In the frame of our ISO processes, feedback from the inspectors will of course be taken into account but no major changes in the NOEF programme have occurred so far. There is no qualitatively or quantitatively assessment of the influence of the inspector's feedback on the NOEF programme. However this will be taken into account in the recent revision of the QA-programme.

Question 4. General

A. How could your NOEF programme improve its communication with inspectors?

By having regular meetings (for example after each WGOE and WGIP meeting) with inspectors and WGOE and WGIP representative in order to discuss the gathered national and international available information.

B. When deciding on what information to send to inspectors, does your NOEF programme consider the ability of inspectors to absorb and take action on OEF? Put another way, do you ensure inspectors (or related specialists) are not overwhelmed by the volume or technical complexity of OEF that is provided?

The inspectors within the department have good knowledge on operation experience. New inspectors follow a hand-tailored training program and join experienced inspectors during inspections. During the “Forsmark investigations” for example, no problems have arisen during the transfer proces of the information. In general, the volume of information that needs to be provided or handled is a bigger issue than the technical complexity.

C. How does management level interact with or manage operating experience personnel and inspectors to ensure sufficient cooperation?

The management level motivates the operating experience personnel and gets informed on the functioning of the process. However, some reinforcements in operating experience knowledge of management personnel are necessary in order to deliver full management capacity. OE personnel and/or inspectors can address management level in case the cooperation seems to be insufficient. Furthermore the inspectors have the opportunity to address this point in their inspection reports. Management level can take corrective actions if judged necessary.

The Russian Federation

Question 1

- A. Rostekhnadzor – Russian Regulatory Authority -has 7 regional offices which include in their turn include NPP on-site offices. State inspectors work either at regional offices itself at NPP on-site offices.

State inspectors are provided with following type of information in regard with operating experience feedback (information circulars are distributed by Rostekhnadzor headquarter through regional offices):

- Overview of deviations in NPP operations which have been investigated and reported to Regulatory Body in accordance with National Regulations;
 - Annual overview of operational indicators trends and plants operational safety statuses;
 - Significant events (or events of interest) Reports provided by Utility;
 - Summary of operational events from foreign (mainly – Ukraine) or international (IRS) sources.
- B. SEC NRS (TSO for RB which is responsible for OEF activity) issue reports, overviews in regular basis. These reports submit to Rostekhnadzor's headquarter and then reports are distributed to regional offices. Also some lectures and workshops are organized time by time.
- C. Usually we include description of event (chronological scenario), analysis of direct and root causes, analysis of adequacy of correcting measures proposed by Utility, some historical information (did similar events occur earlier, and if yes – short description of such events).
- D. Usually not. Summary of most interesting NPP operational events from foreign and international sources is distributed by Rostekhanadzor headquarter.
- E. No special demands for the way of information utilization by inspector. Information on significant events or on events which highlight some new safety- related issues can be distributed by Rostekhnadzor headquarter conjointly with instructions on additional inspections execution or on additional subjects to be included into regular inspection schedules.

Question 2

- A. Inspector use OEF information distributed by Regulatory Body Headquarter for 1) self-education; 2) for consideration in inspection schedules planning; 3) as a reason for extra inspections if such inspection is prescribed by Rostekhnadzor headquarter or by Regional Office or by Head of Local Office
- B. OEF information can call forth introduction of additional inspections or introduction additional subjects to existing planned inspection.
- C. No special prescriptions are written in inspection guidance.
- D. Not required if otherwise is not expressly indicated by Rostekhandzor Headquarter

Question 3

- A. No special formal requirements. Exchange of views take place on seminars organized by Rostekhandor on regular basis
- B. Views expressed by inspectors considered by Headquarter officials. No special requirements.

Question 4

- A. The issue is under consideration.
- B. The information distributed to inspectors is as a rule not raw data, but appears as analytical report with analyses of event sequence, its root and direct causes and corrective measures undertaken.
- C. Interaction is organized in seminars form which are organized in regular basis.

The Slovak Republic

Following most major events, lessons learned show that similar events occurred prior to the major event. Further, if the operating experience events or trends were more effectively identified, shared and addressed, many major events could have been avoided. The assessment, communication and effective use of operating experience is without question a critical element to maintain nuclear safety. However, the means and the extent to which operating experience is provided to inspectors and the format used, as well as the expectations for its use by inspectors vary from country to country. The examination of this diversity of approaches may provide valuable insights for all participants.

The objective of this workshop topic is to share and discuss different approaches and practices as well as to identify commendable practices for the transfer of operating experience that will be of use to the inspector.

Security issues, non-nuclear, what is specifically meant by OEF, risk information on events (risk implication)

If there is a difference between national and local /state level, please specify.

Question 1. Operating Experience to the Inspectors

A. What types of information on Operating Experience is provided to your inspectors? (e.g. Recent operating events, Operating Experience trends, Generic Implication based on results of an Event Assessment.) How does WGOE ensure that information gets to the inspectors?

- To site inspectors is provided daily operating reports, recent operating events reported by operator, quarterly reports containing trends of events and indicators.
- The other inspectors receive information on regular sessions of event analysis group.
- The WGOE is informed by our representative about operating experience information transfer to inspectors.

B. From whom do your inspectors obtain information? (directly from the OEF local/state programme, OEF national programme, from other inspectors, other, non-nuclear) By what means are the inspectors notified? How often do these communications occur? (e.g., informal discussions/ word of mouth, Routine internal meetings, Seminars or presentations, E-mails, Reports or publications)

- The inspectors obtain information from operator's event reports and quarterly reports.
- The site inspectors are informed immediately and others are informed on periodic session of event analyses group.
- The communications are by mails, by direct discussion with operator staff or reports are sent by post.

C. What type of detailed information is included: (e.g., Event details, Analysis of root cause, Identification of generic implications, Directions to the inspectors)

- The information contains the event details, sometime root causes.
- Based on event character the event analyses group decides to organize the follow up inspection.
- Significant events as scrams, technical specification violation, fire are always investigated by regulatory body teams.

D. For each type of information listed above please describe the communication details.

- The information of events is sent to regulatory quarterly by post.
- The earlier information is sent by mail or site inspectors are informed by phone.

E. *What are inspectors required or expected to do with OEF information?*

- Site inspectors react immediately and starts gather more information from touched staff and from unit information system.
- Inspectors at event analyses group are expected to discuss the events and in can require more information or suggest the additional inspection at operator.

F. *How (and to whom) do inspectors report the results of their activities related to OEF? Is it required?*

- From each session of event analyses group is worked out minutes which are disseminated to all inspectors and managers.

Question 2. Inspection Procedures or Inspection programmes

A. *How is operating experience utilised by inspectors in your regulatory inspection programme?*

- The operating experience is utilized at preparing of new inspection plan. All inspectors can suggest new area or special inspection to inspection plan.

B. *How does your NOEF programme influence the type of inspections that are performed by the inspectors?*

- At that time, the NOEF and event analyses group (EAG) are the same.
- NOEF does not influent the type of inspection, the inspection type is given by inspection plan.

C. *How does your NOEF programme influence or is it involved in developing or writing inspection procedures/guidance?*

- The NOEF directly does not have the direct influence on the developing or writing new inspection procedure or guidance. Inspection procedure or guidance is mainly influenced by inspection feedback.

Question 3. Inspection Feedback

A. *How does your NOEF programme receive feedback from the inspectors on the usefulness of the information or suggestions for improvement?*

- The feedback is received by inspector's oral information eventually by records or protocols from inspections during EAG group sessions.

B. *How is your NOEF programme improved by the feedback from the inspectors?*

- The inspectors do not influence the NOEF programme directly.

Question 4. General

A. *How could your NOEF programme improve its communication with inspectors?*

- The NOEF is the platform, where the inspection can discuss the event reports.

B. *What do you see as limitations on the ability of inspectors to absorb and take action on OEF? Put another way, how do you ensure inspectors (or related specialists) are not overwhelmed by the potential volume or technical complexity of OEF that is often seen, week in and week out? Is it the task f OEF or inspectors?*

- Each inspection suggested by EAG based on OEF is additional activity to inspection plan. Usually the team of specialists is formed and inspectors divide the topic among them according to their specialization. The feedback from inspectors is summarized by protocol or record writer.

C. How does management level interact with OE and inspectors to ensure sufficient cooperation?

- Management is informed about OE activities and support inspection at permit holder. If inspection findings are significant, the regulatory body imposes a fine to permit holder.

Question 1: Background: Operating Experience to the Inspectors**A. *What types of information on Operating Experience is provided to your inspectors? (e.g., recent operating events, operating experience trends, generic implication based on results of an event assessment)***

The information on recent operating events (description, safety assessment, causes analysis, lessons learned and corrective actions) and operating trends are analysed by the SNSA staff and it is provided to the SNSA inspectors before inspections are carried out as a part of the preparatory phase.

B. *How do your operating experience personnel provide or transmit the information to the inspectors? (e.g., email, meetings, routine presentations/seminars)*

SNSA developed a special tool to evaluate OE. SNSA inspectors are sometimes involved in the evaluation and they have access to the evaluation outcomes. (Question 4, A) According to the internal procedure of the SNSA the operating experience personal of the SNSA provides the information to the inspectors by e-mails, meetings/presentations (usually once per three month) and unofficial communications.

C. *What type of detailed information is included? (e.g., event details, analysis of root cause, identification of generic implications, directions to the inspectors)*

The information includes: the event description; depended on importance of event sometimes the analysis of root cause; identification of generic implications and suggestions to the inspector's applications.

D. *Beyond the national operational experience feedback (NOEF) programme, do your inspectors receive operating experience from other sources? (e.g., directly from the OEF local/state programme, from other inspectors, non-nuclear sources) How often do these communications occur? (e.g., informal discussions/ word of mouth, Routine internal meetings, seminars or presentations, e-mails, reports or publications)*

The inspectors have possibility to receive information on operating experience from other sources (e.g. the United States Nuclear Regulatory Commission (US NRC) documents; IAEA documents: International Nuclear Events Scale (INES), Incident Reporting System (IRS), Technical Documents (TECDOC), Information Circulars (INFCIRC), OSART Mission Results (OSMIR); Electric Power Research Institute (EPRI) documents, OECD/NEA documents, ISOE (Information System on Occupational Exposure), NUCET (ENS), NEI documents, standard updates (ASME, ANSI), Clearinghouse, ...), daily newspaper, expert magazines (Nucleonics Week, Nuclear Engineering International,...), can be followed daily. Other reports from official and educational travels of SNSA employees and other SNSA documents are provided occasionally). Due to lack of time and a lot of other duties, they get most relevant information from the OEF administrator.

E. *From the OEF programme point of view, what are inspectors required or expected to do with OEF information?*

According to the SNSA procedures two level actions take place:

- Internal actions regarding OEF programme.
- External actions related to the NPP Krško or other institutions e.g., technical support organisation, agency for radioactive waste management - carry out an inspection.

Internal actions include:

- To treat foreign nuclear operating experiences.
- To identify the open questions and to test the usefulness of the information for the improvement of the nuclear safety.

- To assist at solving open questions and to identify the causes.
- To support the management to form appropriate opinions, etc.

External actions are based on internal actions and are a part of regulatory activities based on the prescribed requirements in the legislations i.e. selected OE are considered during inspection of the NPP Krško or other nuclear or radiation facility.

Question 2: Inspection programmes

A. From the inspector point of view, how do inspectors use the OEF information?

Important issues are inputs to the "Annual inspection programme for nuclear and radiation facilities" prepared on a yearly bases and approved by the SNSA director.

Inspector uses the OEF information as a tool to identify possible open safety questions in nuclear facilities.

B. How does your NOEF programme influence the type of inspections that are performed? By the inspectors?

Basis of the SNSA's OEF programme is the SNSA procedure 'ON 2.1.2 Follow and treating of foreign operating experiences and regulatory requirements for nuclear facilities'. The procedure is a part of the quality management system of the SNSA. Four level approaches are taking place. After identification of the OE which can be applicable for the NPP by the SNSA OEF administrator who is screening all OEF the second level is taking place, namely a reviewer (analyst) is determined and he/she prepares detailed analysis. The analysis is presented to the Nuclear Safety Sector of the SNSA which confirms to carry out an inspection. Afterwards this information is given to the SNSA inspection director who decides about the inspection. Then the SNSA inspection is conducted at the facility by the inspector responsible for it and with collaboration of expert from the SNSA (e.g. nuclear safety sector).

C. How does your NOEF programme influence or is it involved in developing or writing inspection procedures/guidance?

The SNSA's OEF programme is used as the reference for developing a part of "Annual inspection programme for nuclear and radiation facilities".

D. How (and to whom) do inspectors report the results of their activities related to OEF? Is it required?

Inspectors report the results of their activities related to OEF to the SNSA Director.

Yes, according to the regulations, the inspectors report should be prepared after each inspection in a due time. The report is a legal public document.

Question 3: Inspection feedback to operational experience feedback programmes

A. How does your NOEF programme receive feedback from the inspectors on the usefulness of the information or suggestions for improvement?

The feedback information from the inspectors on the usefulness of the information or suggestions for improvement is transmitted at meetings of the Nuclear Safety-Inspection section (four times per year). Regarding the fact that the expert of the Nuclear Safety Sector is collaborating at the inspection the formal communication between the experts of the SNSA is not established but all information are discussed at the meeting of the Nuclear Safety Sector. On the other hand Nuclear Safety Sector is provided with all inspection records. Employees of the Nuclear Safety Sector participate in inspection activities regarding OEF.

B. How has/is your NOEF programme improved by the feedback from the inspectors?

The OEF programme is improved by inclusion of the experiences gained at the inspections i.e. the internal procedure of the SNSA "ON 2.1.2 Follow and treating of foreign operating experiences and regulatory requirements for nuclear facilities" is updated.

Question 4: General

A. How could your NOEF programme improve its communication with inspectors?

Operating experiences are recorded into the SNSA database of the OEF with a software application (Operating Experience Database). This application also serves as an editing and reviewing tool, and as a tool for notifications about actions to be taken. Operating Experience Database is at disposal for all SNSA employees. The communication with inspectors can be improved by additional internal meetings/representations.

B. When deciding on what information to send to inspectors, does your NOEF programme consider the ability of inspectors to absorb and take action on OEF? Put another way, do you ensure inspectors (or related specialists) are not overwhelmed by the volume or technical complexity of OEF that is provided?

According to the answer at Question 2 B a graded approach is taking place, namely four level approaches.

C. How does management level interact with or manage operating experience personnel and inspectors to ensure sufficient cooperation?

Director of the SNSA is informed every three months by the OEF administrator about the work and he/she is informed about the Nuclear Safety and Inspection sector meetings. After or before inspections a briefing or meeting with inspectors and Nuclear Safety Sector experts are taking place as appropriate.

Spain

Following most major events, lessons learned show that similar events occurred prior to the major event. Further, if the operating experience events or trends were more effectively identified, shared and addressed, many major events may have been avoided. The assessment, communication and effective use of operating experience is without question a critical element to maintain nuclear safety. However, the means and the extent to which operating experience is provided to inspectors and the format used, as well as the expectations for its use by inspectors vary from country to country. Likewise, inspection information supplied into an operating experience feedback programme enhances a regulatory body's effort to identify and correct trends early. The examination of this diversity of approaches may provide valuable insights for all participants to improve the operating experience programme, inspection programme, and the communication between the two programmes. The discussion topic will not include security or safeguards issues.

If there is a difference between national and local /state level, please specify.

Question 1. Background: Operating Experience to the Inspectors

A. *What types of information on Operating Experience is provided to your inspectors? (e.g., recent operating events, operating experience trends, generic implication based on results of an event assessment)*

The OE information given to the inspectors is: reportable events and their generic implications, minor events, generic issues, as well as performance indicator results.

In the CSN there is not distinction between inspectors and evaluators, so that most CSN technical staff carries out assessment and inspections activities. In addition, there are site inspectors located at each NPP who carry out some of the inspections in the Basic Inspection Programme.

B. *How do your operating experience personnel provide or transmit the information to the inspectors? (e.g., email, meetings, routine presentations/seminars)*

The main way of transmitting operational experience information is the Incident Review Panel. This panel meets monthly with the aim of analyzing and categorizing recent reportable events. The panel is made up of representatives of all CSN technical areas and is led by the Head of the Operating Experience section.

All relevant information of reportable events is included in a database; additionally there is another database about generic issues. Both databases are managed by the operating experience staff.

C. *What type of detailed information is included? (e.g., event details, analysis of root cause, identification of generic implications, directions to the inspectors)*

Database of reportable events includes:

- The event report submitted by the licensee within 30 days after the occurrence of the event.
- The identification of generic implications that have been analyzed at the event review panel meetings.
- Probabilistic safety assessment when applicable.
- Information notices sent by the resident inspectors as a consequence of reportable event reports.
- Root cause analysis carried out by the licensee.

According to Spanish regulations, NPPs are obliged to do Root Cause Analysis for every reportable event due to internal causes.

D. Beyond the national operational experience feedback (NOEF) programme, do your inspectors receive operating experience from other sources? (e.g., directly from the OEF local/state programme, from other inspectors, non-nuclear sources) How often do these communications occur? (e.g., informal discussions/ word of mouth, Routine internal meetings, seminars or presentations, e-mails, reports or publications)

Other sources of operating experience used by inspectors are IRS database and Significant Event Reports (SER)/Significant Operating Experience Reports (SOER) from INPO /WANO.

Inspectors do not receive operating experience from non-nuclear sources.

E. From the OEF programme point of view, what are inspectors required or expected to do with OEF information?

The CSN carries out an inspection to the NPPs' operational experience feedback program every other year. The objectives of these inspections, conducted by CSN operating experience personnel, are to verify the adequacy of the operating experience analysis made by the licensee and the efficiency of corrective actions (e.g. that correctives actions are adequate and implemented in time in order to avoid repetitive and recurrent events).

In general all inspectors have to verify that the Licensee identifies and uses all the Operating Experience available and applicable to the subject of the inspection properly.

Question 2. Inspection programmes

A. From the inspector point of view, how do inspectors use the OEF information?

Inspectors use the OEF information for evaluation as well as for inspection activities.

B. How does your NOEF programme influence the type of inspections that are performed by the inspectors?

As has been mentioned, all the inspections carried out by the CSN (Basic Inspection Program of the NPPs' Supervision Process) use OE information; this information is requested particularly to operating experience staff in the case of multi-disciplinary inspections.

There are other types of inspections as a consequence of the CSN OEF program:

- Inspections to the Licensee's Operating Experience Program.
- Incident Investigation Inspections (Reactive Inspections).

C. How does your NOEF programme influence or is it involved in developing or writing inspection procedures/guidance?

Up to now, only some inspection procedures take into account the OE.

A new inspection procedure related to the Licensee OE Program is about to be finished.

D. How (and to whom) do inspectors report the results of their activities related to OEF? Is it required?

- The results from the inspections are public.
- Only in case the results include significant findings, these are discussed by a special committee for their review.
- Additionally, in the case of the Incident Investigation Inspections, inspectors could include some additional corrective actions.

Question 3. Inspection feedback to operational experience feedback programmes

A. How does your NOEF programme receive feedback from the inspectors on the usefulness of the information or suggestions for improvement?

Currently, CSN's OEF program only receives direct feedback from the inspections to the Licensee's Operating Experience Program and from the Incident Investigation Inspections, and also CSN profit the feedback from the Event Review panel discussions.

B. How has/is your NOEF programme improved by the feedback from the inspectors?

Through the actions associated with the above mentioned inspections.

Question 4. General

A. How could your NOEF programme improve its communication with inspectors?

Currently there are not specific actions foreseen.

B. When deciding on what information to send to inspectors, does your NOEF programme consider the ability of inspectors to absorb and take action on OEF? Put another way, do you ensure inspectors (or related specialists) are not overwhelmed by the volume or technical complexity of OEF that is provided?

Meetings of the Event Review Panel are a filter of the importance and complexity of OE information.

C. How does management level interact with or manage operating experience personnel and inspectors to ensure sufficient cooperation?

A Summary report with the main conclusions is prepared after the meeting of the Event Review Panel. This report is sent to the Technical Directors and their Deputy Directors.

Sweden

Following most major events, lessons learned show that similar events occurred prior to the major event. Further, if the operating experience events or trends were more effectively identified, shared and addressed, many major events may have been avoided. The assessment, communication and effective use of operating experience is without question a critical element to maintain nuclear safety. However, the means and the extent to which operating experience is provided to inspectors and the format used, as well as the expectations for its use by inspectors vary from country to country. Likewise, inspection information supplied into an operating experience feedback programme enhances a regulatory body's efforts to identify and correct trends early. The examination of this diversity of approaches may provide valuable insights for all participants to improve the operating experience programme, inspection programme, and the communication between the two programmes. The discussion topic will not include security or safeguards issues. If there is a difference between national and local /state level, please specify.

Question 1. Background: Operating Experience to the Inspectors

A. *What types of information on Operating Experience is provided to your inspectors? (e.g., recent operating events, operating experience trends, generic implication based on results of an event assessment)*

Conclusions from the operational experience group based on event assessment, including further investigation on what can be of interest to get more information about the events and how the system for event investigation really find the ground causes and apply adequate countermeasures.

B. *How do your operating experience personnel provide or transmit the information to the inspectors? (e.g., email, meetings, routine presentations/seminars)*

Meeting minutes after operation experience meetings to inspectors (among others) and weekly presentation on management meetings.

C. *What type of detailed information is included? (e.g., event details, analysis of root cause, identification of generic implications, directions to the inspectors)*

The minutes are short but all deep information is linked and is easy reached within the NOEF database,

D. *Beyond the national operational experience feedback (NOEF) programme, do your inspectors receive operating experience from other sources? (e.g., directly from the OEF local/state programme, from other inspectors, non-nuclear sources) How often do these communications occur? (e.g., informal discussions/ word of mouth, Routine internal meetings, seminars or presentations, e-mails, reports or publications)*

E. *From the OEF programme point of view, what are inspectors required or expected to do with OEF information?*

Basically the NOEF give information to the organization without follow-up. But the questions from the NOEF-group to inspectors/Licensees and other parts of the organization are followed-up in the NOEF-database.

The reports from inspections also go to OPEX

Question 2. Inspection programmes

A. *From the inspector point of view, how do inspectors use the OEF information?*

- B. *How does your NOEF programme influence the type of inspections that are performed by the inspectors?***
- C. *How does your NOEF programme influence or is it involved in developing or writing inspection procedures/guidance?***
- D. *How (and to whom) do inspectors report the results of their activities related to OEF? Is it required?***

Question 3. Inspection feedback to operational experience feedback programmes

- A. *How does your NOEF programme receive feedback from the inspectors on the usefulness of the information or suggestions for improvement?***

The SSM is a rather small organization so feedback is given on a peer level. There are also inspectors in the OPEX group.

- B. *How has/is your NOEF programme improved by the feedback from the inspectors?***

The group receives feedback on a peer basis, NOEF change routines if the other parts of the organization see other needs. Management meetings every week also gives suggestions for improvement of the programme.

Example: we are working with indicators, and inspectors are key persons to seek out what kind of indicators that we shall look at.

Question 4. General

- A. *How could your NOEF programme improve its communication with inspectors?***

Management commitment. Managers have to show that they really support this kind of work. It has been improved, but we still have work to do.

There are lots of ideas, but small resources give the frame of the developing work.

We have since 2010 developed a new database that is very easy to seek out information, and follow all the work done by the NOEF programme.

- B. *When deciding on what information to send to inspectors, does your NOEF programme consider the ability of inspectors to absorb and take action on OEF? Put another way, do you ensure inspectors (or related specialists) are not overwhelmed by the volume or technical complexity of OEF that is provided?***

NOEF often ask questions to Licensee via inspector. The inspector receives the question in the NOEF database/working tool. If the inspector is present at the NOEF meeting then he takes part in the problem formulation. If he only receives it in the database/working tool, he is responsible to send it back if there is something unclear. The NOEF put the question on a watch list until it is processed. If the NOEF sends out more complex information or questions that need more resources, then this is presented on management meetings and management has to decide if there are resources available to deal with the topic. Complex information can be sent to specialists without follow-up (since the specialist is the best to evaluate the information)

- C. *How does management level interact with or manage operating experience personnel and inspectors to ensure sufficient cooperation?***

NOEF is present on weekly management meetings to present OPEX and how the programme is working. When managers show “management commitment” to OPEX, the system works well.

Switzerland

Following most major events, lessons learned show that similar events occurred prior to the major event. Further, if the operating experience events or trends were more effectively identified, shared and addressed, many major events may have been avoided. The assessment, communication and effective use of operating experience is without question a critical element to maintain nuclear safety. However, the means and the extent to which operating experience is provided to inspectors and the format used, as well as the expectations for its use by inspectors vary from country to country. Likewise, inspection information supplied into an operating experience feedback programme enhances a regulatory body's efforts to identify and correct trends early. The examination of this diversity of approaches may provide valuable insights for all participants to improve the operating experience programme, inspection programme, and the communication between the two programmes. The discussion topic will not include security or safeguards issues.

If there is a difference between national and local /state level, please specify.

Question 1. Background: Operating Experience to the Inspectors

A. What types of information on Operating Experience is provided to your inspectors?

All inspectors have access to the information on OE listed in licensees monthly/annual/outage/event reports, reports of the Swiss RB (ENSI) on inspections/reportable events/operation/international OE (IRS, IAEA, Clearinghouse, NRC, press, meetings)/10 years evaluation as well as in the safety evaluation system and in our annual report.

B. How do your operating experience personnel provide or transmit the information to the inspectors?

Beside Email, meetings, routine presentations/seminars see A of Question 1. There is an integrated document management and work flow system handling and tracking the information according to the processes listed in our Management System.

C. What type of detailed information is included?

Beside event details, analysis of root cause, identification of generic implications, directions to the inspectors and enforcement aspects see A and B of question 1.

D. Beyond the national operational experience feedback (NOEF) programme, do your inspectors receive operating experience from other sources? (e.g., directly from the OEF local/state programme, from other inspectors, non-nuclear sources) How often do these communications occur? (e.g., informal discussions/ word of mouth, Routine internal meetings, seminars or presentations, e-mails, reports or publications)

Yes, see A and B of question 1.

E. From the OEF programme point of view, what are inspectors required or expected to do with OEF information?

Inspectors are required to retrieve OE-information (when inspecting) and actively disseminate (later). Inspectors are expected to take notice of the information on OEF and if appropriate initialize measures (enforcement).

Question 2. Inspection programmes

A. From the inspector point of view, how do inspectors use the OEF information?

According to E of question 1. The Management System (MS) expects that all processes are followed. Key figures in the MS show if a process works. The communication of process deviations and audits look at the process and close the loop of continuous improvement.

B. *How does your NOEF programme influence the type of inspections that are performed by the inspectors?*

There is not one separate NOEF/OEF-programme (or process). OEF is part of several processes in our MS (the operation supervision processes emergency preparedness, inspection, event processing, outage, enforcement, safety evaluation, radiation monitoring and the plant assessment processes expert report and permit).

So far Swiss NOEF actively influences the inspection program. OEF may lead to a reactive or focused inspection or to team inspections in all plants. A holdpoint to decide for the focus of next year inspections is the annual plant meeting.

C. *How does your NOEF programme influence or is it involved in developing or writing inspection procedures/guidance?*

See A of question 2. Continuous improvement is an aspect of a MS. As an outcome the opportunity to improve may be seen in the development/modification of inspection procedures/guidances.

D. *How (and to whom) do inspectors report the results of their activities related to OEF? Is it required?*

See E of question 1. Results/findings are discussed/disseminated within the group the inspector is working for. Results/findings of each inspection have to be documented in an inspection report and actively distributed to people in charge of the corresponding aspect/plant and made available to all other inspectors through the electronic document management system. For the further proceeding see A of question 3 (Topic 2).

Question 3. Inspection feedback to operational experience feedback programmes

A. *How does your NOEF programme receive feedback from the inspectors on the usefulness of the information or suggestions for improvement?*

See last part of B, Question 2.

In case of a suggested improvement of a process in the MS the suggestion is entered by the inspector in the so called MS-improving-database and automatically gives a task to the responsible of the corresponding process. The status of the task as well as the decision made and the way of fulfillment can be seen any time.

The outcome of the screening of IRS reports is an example to the improvement: The IRS-officer informs the corresponding inspector. The Inspector takes notice and may retrieve the npp internal OE report or request the licensee to assess and inform the ENSI. The results are then fed back to the experts in the authority.

B. *How has/is your NOEF programme improved by the feedback from the inspectors?*

The MS is “living”. An example for the continuous improvement is the modification of the inspection process due to the experience of the last two years.

Question 4. General

A. *How could your NOEF programme improve its communication with inspectors?*

The necessity to improve communication aspects in a process depends heavily the way it is lived. Small organization like the Swiss RB may use the opportunity to keep inspectors responsible for their work and keep formal aspects on a motivating level.

- B. When deciding on what information to send to inspectors, does your NOEF programme consider the ability of inspectors to absorb and take action on OEF? Put another way, do you ensure inspectors (or related specialists) are not overwhelmed by the volume or technical complexity of OEF that is provided?***

As mentioned under B of question 2 OEF is covered by several processes. As mentioned under A of question 4 inspectors have to be kept responsible for their work.

- C. How does management level interact with or manage operating experience personnel and inspectors to ensure sufficient cooperation?***

The leader of a section being ahead of the inspector discusses inspection findings and releases the corresponding report.

Upper management as well as the corresponding process responsible takes notice of the outcome and trending issues. They may discuss and decide on enforcement actions proposed. At the annual meeting the safety of the npp is discussed interdisciplinary among management and plant inspectors.

The United Kingdom

Following most major events, lessons learned show that similar events occurred prior to the major event. Further, if the operating experience events or trends were more effectively identified, shared and addressed, many major events may have been avoided. The assessment, communication and effective use of operating experience is without question a critical element to maintain nuclear safety. However, the means and the extent to which operating experience is provided to inspectors and the format used, as well as the expectations for its use by inspectors vary from country to country. Likewise, inspection information supplied into an operating experience feedback programme enhances a regulatory body's efforts to identify and correct trends early. The examination of this diversity of approaches may provide valuable insights for all participants to improve the operating experience programme, inspection programme, and the communication between the two programmes. The discussion topic will not include security or safeguards issues.

Question 1. Background: Operating Experience to the Inspectors

A. *What types of information on Operating Experience is provided to your inspectors? (e.g., recent operating events, operating experience trends, generic implication based on results of an event assessment)*

ONR has arrangements which involve the regular and systematic review of operating experience from a range of sources, including reports made to it by licensees on events and incidents that occur on the sites and from international and other non-nuclear OE. In relation to UK licensees' event reports ONR assigns preliminary causal codes to these. On a periodic basis, ONR uses trends based on these causal codes to provide an indication, together with other information, of licensee safety performance. Licensees are expected to carry out their event causal code and any other relevant trending. ONR is looking to utilise licensees' event trending to supplement its own analysis.

The outputs from the above reviews are shared with inspectors (both assessors and site inspectors) through trending reports and advice notes on relevant generic topics.

B. *How do your operating experience personnel provide or transmit the information to the inspectors? (e.g., email, meetings, routine presentations/seminars)*

Mainly by email of relevant information.

C. *What type of detailed information is included? (e.g., event details, analysis of root cause, identification of generic implications, directions to the inspectors)*

For internationally reported events summaries are made including corrective actions, root causes and lessons learned.

For information related to UK events it is the licensees who are responsible for investigating events and identifying root causes, corrective actions and lessons learned. This information is available to site inspectors when they perform either reactive inspections or planned inspections of arrangements made under Licence Condition 7: Incidents on the site. Inspectors are independently notified of events by licensees as they occur.

D. *Beyond the national OEF programme, do your inspectors receive operating experience from other sources? (e.g., directly from the operational experience feedback (OEF) local/state programme, from other inspectors, non-nuclear sources) How often do these communications occur? (e.g., informal discussions/ word of mouth, Routine internal meetings, seminars or presentations, e-mails, reports or publications)*

International and relevant non-nuclear OEF is summarized and sent by email to relevant Nuclear Topic Groups (inspectors grouped by discipline not function) within ONR on a 1-2 monthly basis.

E. From the OEF programme point of view, what are inspectors required or expected to do with OEF information?

There is no direct requirement for inspectors to act on OEF information; it is left to their discretion on how they use it. However, if an Advice Note is issued to ONR inspectors there is an expectation that they will factor it into their inspections not least to ensure that licensees are addressing the issues raised.

Question 2. Inspection Programmes

A. From the inspector point of view, how do inspectors use the OEF information?

Technical assessors will use the relevant OE in their technical discussions with licensees, in relation to emerging plant safety issues and through safety case assessment eg for PSRs.

Site inspectors use the OEF information as one of many sources of information available to them to assist in targeting their inspection activities.

B. How does your NOEF program influence the type of inspections that are performed by the inspectors?

There is a need for regulatory investigation of the most safety significant of events that occur on sites, these are notified to ONR under the LC7 arrangements or other legislative provisions. These investigations are categorized as reactive inspections and may occupy as much as 20% of an inspector's time on site. These are planned in among their inspection plan.

For generic issues identified from other OE then these are at the discretion of the inspector to pursue with the licensee as they see fit.

C. How does your NOEF programme influence or is it involved in developing or writing inspection procedures/guidance?

ONR inspection guidance takes account of regulatory OE but not in any systematic fashion. ONR inspection guidance takes into account international good practice in the form of IAEA safety standards and other relevant practices. As part of the production process new or updated draft inspection guides are reviewed by experienced inspectors from each operating division within ONR. The technical inspection guide related to LC7 and OEF was written by the corporate OEF unit in order to promote consistency of inspection approach in this area across the operating divisions. Its implementation is managed by the local Inspection Management Group.

D. How (and to whom) do inspectors report the results of their activities related to OEF? Is it required?

Inspectors are required to report the results of their activities related to OEF in their documented site inspection reports, following each visit. The inspection reports will include the outcome of any follow-up to incidents reported to ONR that meet the threshold for further investigation. These reports are sent to their Unit Head who is responsible for inspection of several sites of a similar type eg operating NPPs.

In addition groups of site inspectors meet on a quarterly basis to discuss the outcome of their inspections to identify potential generic issues and to amend future plans for site inspection. OEF is included as an agenda item in these meetings. Any matters arising from these discussions would be circulated around interested parties.

Question 3. Inspection Feedback to OEF Programmes

A. How does your NOEF programme receive feedback from the inspectors on the usefulness of the information or suggestions for improvement?

There is a formal option available to inspectors for feedback though a pro-forma. However, this is seldom used and most feedback is given either verbally or through informal emails and in this form is predominantly positive.

B. How has/is your NOEF programme improved by the feedback from the inspectors?

Any feedback is recorded and subsequently considered when inspection guidance is due to be updated (currently on a triennial frequency).

Question 4. General**A. How could your NOEF programme improve its communication with inspectors?**

By better integration into inspector training and by creating a specific webpage within the newly established ONR website/intranet where current, relevant OE related information can be highlighted and with links to other major information sources such as EU Clearinghouse and IAEA IRS.

B. When deciding on what information to send to inspectors, does your NOEF programme consider the ability of inspectors to absorb and take action on OEF? Put another way, do you ensure inspectors (or related specialists) are not overwhelmed by the volume or technical complexity of OEF that is provided?

Yes, the number of Advice Notes issued to all inspectors is infrequent, typically about 4 per year. IRS, FINAS and EU Clearinghouse reports and information are summarized onto a single page. IRS topical reports are usually quite long but are available to the specialists in the relevant technical area.

C. How does management level interact with or manage operating experience personnel and inspectors to ensure sufficient cooperation?

Interaction at the senior management level is rather limited. At middle management level interest and interaction is more noticeable. A small corporate regulatory services group contains the OEF function and the head of this Unit attends the cross divisional inspection and assessment coordination groups. Here OEF is considered periodically.

The United States of America

Following most major events, lessons learned show that similar events occurred prior to the major event. Further, if the operating experience events or trends were more effectively identified, shared and addressed, many major events may have been avoided. The assessment, communication and effective use of operating experience is without question a critical element to maintain nuclear safety. However, the means and the extent to which operating experience is provided to inspectors and the format used, as well as the expectations for its use by inspectors vary from country to country. Likewise, inspection information supplied into an operating experience feedback programme enhances a regulatory body's efforts to identify and correct trends early.

The examination of this diversity of approaches may provide valuable insights for all participants to improve the operating experience programme, inspection programme, and the communication between the two programmes. The discussion topic will not include security or safeguards issues.

If there is a difference between national and local /state level, please specify.

Question 1. Background: Operating Experience to the Inspectors

A. What types of information on Operating Experience is provided to your inspectors? (e.g., recent operating events, operating experience trends, generic implication based on results of an event assessment)

Operating Experience information or "OpE" is provided to inspectors in a variety of ways. The detailed answer to sub-questions A, B, C and D is provided in a table, below.

B. How do your operating experience personnel provide or transmit the information to the inspectors? (e.g., email, meetings, routine presentations/seminars)

Operating staff mainly use e-mail and teleconference calls with inspection staff in the Region Offices, but also meet with regional staff periodically at the annual Regional Counterparts Meeting, or if requested to visit the Region office for a particular issue. Each of the four regional offices assigns one senior member of the staff, or a supervisor, a collateral duty to serve as the Region Office's OEF (OpE) Point of Contact (POC). Much of the OEF that is transmitted may be reviewed and further distributed to the applicable inspectors by the OEF POC. Additional details regarding the methods of communications to inspectors is provided in a table below.

C. What type of detailed information is included? (e.g., event details, analysis of root cause, identification of generic implications, directions to the inspectors)

The level of detail and purpose of the information provided varies with the type of communication involved. The detailed answer to sub-questions A, B, C and D is provided in a table, below.

D. Beyond the national operational experience feedback (NOEF) programme, do your inspectors receive operating experience from other sources? (e.g., directly from the OEF local/state programme, from other inspectors, non-nuclear sources) How often do these communications occur? (e.g., informal discussions/ word of mouth, Routine internal meetings, seminars or presentations, e-mails, reports or publications)

In answer to sub-questions A), B), C), and D):

Operating Experience (OpE) information is provided to inspectors in a variety of formats and products. The following table provides a summary of the ways that OpE is communicated.

ITEM TYPE	DESCRIPTION	FORMAT	FREQUENCY
OpE Screening Summary	<p>Summary of the OpE that has been screened by the Clearinghouse Screening Team, produced from OpE data that has been loaded into an "Issue Tracking Database" by members of the Clearinghouse team.. It includes OpE (event details, apparent or root cause if/when known, etc) that has been screened "in" for further technical & safety evaluation as an "Issue for Resolution" ("IFR"), issues or events that warrant additional discussion in an OpE "COMMunication" (discussed below), summarized list of OpE events/issues that are internally shared with Technical Review Groups (TRG's) for their evaluation/ trending, international OpE reports, summaries of reports of (10CFR21) defects/non-conformances, notes from Regional morning teleconference calls in which events and developments at each plant are discussed for each operating unit/site. The screening meeting includes review of applicable OEF from internal, international, and "other" sources if they are pertinent. An example daily screening summary is provided as an attachment to this survey response.</p>	<p>E-mail to a subscriber list, which includes Regional OpE Points of Contact, and any inspectors who have subscribed.</p>	<p>Daily</p>
Regional Tele-Conference Call	<p>Operating Experience Branch staff participate in all Regional Morning Calls and, while they usually take notes and obtain information from the inspection organizations in the Region, they sometimes also provide information learned from a different region or source, that may be of use to the inspectors in the region. OpE branch staff will also call specific region staff or inspectors to discuss particular issues of emergent concern. Includes details of events and issues at each plant.</p>	<p>Telephone discussion</p>	<p>As needed, typically 3 or more times per week</p>
OpE "COMMs"	<p>OpE "COMMunications" or "COMMs" are posted to the internal web page in USNRC known as the Reactor Operating Experience Information Gateway. This product is a summary style, generally one page web-based document describing an event or other OpE issue, with links to pictures, references such as the source inspection reports, LER's, Event Reports, Part 21 reports, drawings, graphics, related operating experience reports, etc. All NRC staff, including Inspectors, are invited to subscribe to OpE COMMs, and subscribers are notified via an e-mail announcement when a new COMM has been published. The author of the COMM is identified as a contact point for further discussion of the OpE by any interested staff. All OpE COMMs since the program began publishing this product are available, binned in approximately 28 different areas of interest/disciplines, such as Piping, Vessels and Welding issues, Auxiliary Feedwater, Emergency Core Cooling, Steam Generators, Electrical issues, Pumps and Valves, etc. If a particular COMM may have interest to inspectors, they will be contacted via their regional OpE Points of Contact to ensure they view the COMM.</p>	<p>Internal Web based one page report, with e-mail announcement to subscribers</p>	<p>About 70 to 120 COMMs per year, usually within 2 weeks of decision to publish</p>

ITEM TYPE	DESCRIPTION	FORMAT	FREQUENCY
Inspector Newsletter	OpE branch staff provide inputs in the form of summaries or articles on OpE topics for publication in the Inspector Newsletter, which is shared with all inspectors. An OpE branch staff member sits on the Editorial Board for the Newsletter.	Electronic and hard copy Newsletter	Quarterly
Notable OpE Summary Report	This is a product compiled from review of recent OpE, as found in Licensee Event Reports, Event Notifications, International OpE reviews, Screening Summaries, etc, with a focus on the most recent six month period. This product seeks to provide a summary analysis of OpE by branch staff who have brought together the information and methodically binned it into logical categories with some assessment of the trend in the given groups of issues; e.g., is the OpE that has been seen indicative of a new emerging issue or repetitive problems. The report is provided to each Regional OpE representative in support of the region office Mid-Cycle and End-of-Cycle reviews of licensee performance.	Several page Word Document report consisting of a table of grouped/binned OpE and brief analysis.	Twice Yearly
Event Reports	Event Reports (EN's) submitted by Licensees in accordance with 10CFR50.72 and Licensee Event Reports (LER's) submitted by Licensees in accordance with 10CFR50.73 are received by the Headquarters Operations Officer and communicated to appropriate staff. These are discussed by HQ and inspection staff for the affected plants	Via e-mail to selected subscribers, and posted to NRC public Web Site	Daily, as reports are received
Inspection Reports	Inspection reports are generated regularly (quarterly) and as required for special inspections. These reports contain the results of the given inspection or routine inspection period, a portion of which will involve any notable operating experience. So much information is in these reports, that inspectors do not generally have the time to read inspection reports from other plants or regions. The Operating Experience branch analysis team reviews reports like this to identify any emerging trends or groupings of OEF and would then synthesize and report in a separate document.	Once finalized, inspection reports are posted to the NRC Website	
Generic Communication	OpE in the form of Information Notices, Preliminary Notifications, Generic Letters, and less often, bulletins / orders are provided to all NRC staff as information, and via the NRC Web Page. The OpE branch does not necessarily participate in the writing and publication of all Generic communications, but contributes to a good number of them. Nonetheless, nearly all generic communications contain useful OpE for inspectors to use.	Standardized report, posted electronically	When issued, generally within four months of decision to develop.

ITEM TYPE	DESCRIPTION	FORMAT	FREQUENCY
OpE Overview & Analysis Report (OAR)	This is a high level summary overview of OpE developments, with emphasis on the most recent 6 to 12 months, provided as a briefing presentation to the Director of the Office of Nuclear Reactor Regulation (NRR), his direct reports, other Office Directors, and to the heads of NRC Regional Offices and their staff. Insights from this briefing are then shared by the regions with their applicable staff, including inspectors.	Briefing slides, presentation & posting on (internal) reactor OpE Information gateway	Twice yearly
OpE search results and inputs to Inspection Teams	Special and focused inspection teams often contact the OpE organization to obtain specialized search reports to support the team's preparation for inspection. OpE staff conduct searches and produce the results; staff seeks to also teach the requestor how to conduct the searches themselves to improve overall efficiency and timeliness of inspection preparations.	Electronic search results report, usually forwarded by e-mail	As requested.
OpE Significant Topics Briefings	This is a briefing using PowerPoint slides with a focus on a specific OpE Topic, provided to the NRR Executive Team and Regional (inspector) executives and appropriate staff, including the Regional OpE counterparts.	Presentation at HQ with VTC feed to the Regional Offices	As needed, based on the safety significance & generic applicability
Regional Counterparts Meetings Briefings	A briefing by an OpE branch staff member, who travels out to present to all Regional staff and Resident Inspectors as part of the agenda of their periodic counterparts meeting held at the Regional Office. The briefing may be on a specific OpE event or topic, or may address OpE processes and routines, depending upon what is requested, needed by or of interest to the Regional Office in the interest of more fully informing regional and resident inspectors.	In person brief, with questions and answers, followed by additional discussion/communication as needed.	About once per year.

ITEM TYPE	DESCRIPTION	FORMAT	FREQUENCY
OpE “Smart Samples” (OpESS)	This is a topic specific OpE-based document that provides resident inspectors a tool to focus their inspection efforts during their routine baseline inspection work. Examples have included inspection of Emergency Diesel Generators, Electrical Equipment & Connections, heavy load movement, maintenance activities and treatment of components installed longer than vendor recommended life. Note the OpESS tool is not considered mandatory for use. Inspectors are requested to document use of the OpESS in their inspection report covering the period the product was used.	Written inspection aid, e-mailed to the Regional OpE points of contact, posted on the Reactor OpE Information Gateway. Inspectors are notified via mention in the Inspector Newsletter and e-mail, telephone, etc.	One or two per year
Region Office WebPage	Each Region Office has its own Operating Experience web page, with links to the Headquarters Reactor OpE Information Gateway.	Posted on internal web site	Always present, updated regularly
Temporary Instruction	Temporary Instructions are written to provide specific guidance to resident/ regional inspectors to conduct a focused inspection, such as Operating Experience or technical issue that has arisen from an event or generated by other occurrence. These are required to be performed.	Developed in coordination with each of the four regional offices, and communicated by e-mail to applicable inspection staff.	Infrequent, as needed

ITEM TYPE	DESCRIPTION	FORMAT	FREQUENCY
Inspection Procedures in the Inspection Manual	These procedures cover all safety important aspects of plant design, engineering, operation, maintenance, quality assurance and management. They are periodically reviewed and updated with OEF and other inputs. Specific OEF can be introduced into applicable inspection procedures via a documented "Feedback Form" process, used by both Regional and headquarters staff, and processed by the headquarters program office to ensure appropriate review and updates to Inspection Procedures/Inspection Manual Chapter(s).	Electronic updates to IMCs by HQ Programme Office via periodic review or when needed via feedback form. Once changed, the updated/ revised IMC is issued to all applicable inspection staff for their use.	Periodically and as needed
Other sources: Info from other inspectors	Inspectors at any given nuclear plant are able to quickly contact other inspectors and regional and headquarters staff and management to learn of OEF that has occurred at plants of the same design/age	via phone call, e-mail, or face to face meetings and site visits.	As the need and opportunity arises
Other sources: Regulatory Information Conference, Vendor Owners Groups, Industry Associations	Headquarters and Regional inspection staff obtain OEF from many other sources, including the Media, Industry Groups (INPO, NEL, WANO, Owners' Groups, etc.), and applicable meetings and conferences with industry including the annual Regulatory Information Conference.	Web page updates, Regular Mail, e-mail, attendance at conferences and meetings with industry.	As the need and opportunity arises, or as scheduled.

E. From the OEF programme point of view, what are inspectors required or expected to do with OEF information?

Generally speaking, inspectors are professionally expected to stay as informed as they can, consistent with their main requirement to execute and document a demanding “baseline” inspection schedule. When inspectors learn of OEF from other stations that could have applicability to their plants, they have the authority to inquire about it during their inspection activities. Inspectors communicate routinely with one another and with their Region management and share plant status and any OEF or technical concerns that arise on their assigned plant site. Occasionally, when specific OEF is significant enough and generically applicable to multiple plants, a Operating Experience Smart Sample (OpESS) is generated by Headquarters Operating Experience staff, sometimes in cooperation with regional inspection staff, to help provide the OEF as a tool to help sharpen the focus of the resident inspectors’ baseline inspection work in a particular area. The OpESS tool is not considered a mandatory process for inspectors to follow. OEF information (OpE) that is significant enough to warrant required follow-up or examination by inspectors is incorporated into changes to the inspection procedures by way of an inspection procedure feedback form or it may be developed as a specific, specially developed temporary instruction (TI) to inspectors. This approach to use of OEF is not used with great frequency, being reserved for especially significant or time-critical activity by inspectors. Such a TI was recently developed and issued to inspectors in the four NRC Regions to inspect and assess licensee activities for immediate response to the OEF from the Fukushima Dai-ichi reactor plant tsunami damage.

Additional remarks – Certain Periodic focused inspections include OEF. For example, one is conducted to examine a licensee’s “Problem Identification and Resolution” (PI&R) programme. These PI&R inspections are conducted by a team from the applicable regional office to examine one of the most important aspects of a licensee’s overall programme, that is, to assess how well he licensee identifies, examines, documents and resolves problems and issues. One of the aspects of these inspections is to see how effectively the licensee uses and incorporates OEF. In preparation, the inspection team is informed by OEF for the particular plant being inspected. Another periodic focused team inspection conducted at U.S. nuclear plant sites is called the “Component Design Basis Inspection” (CDBI). During their preparation for CDBI inspections, the assigned team leader uses OEF for the plant that will undergo the inspection. When an event has occurred at a nuclear plant that is evaluated to have higher risk significance (as indicated by quantitative risk assessment of core damage frequency of 1E-6 or higher or an increase in CDF of 1E-6 or higher along with qualitative criteria that indicate the seriousness of the event), then the applicable NRC Region Office may conduct a “Reactive Inspection” and bring additional resources into an inspection team (a “Special Inspection Team” or SIT) that quickly travels to the site to examine the event and the licensee’s handling of it. If an event is more serious, the NRC may conduct an AIT (“Augmented Inspection Team”) inspection, using additional technical and inspection resources from NRC Headquarters. The most serious events, such as Davis Besse, result in an IIT, or Integrated Inspection Team, which provides for agencywide support and involvement of top management and the NRC Commissioners.

Question 2. Inspection programmes

A. From the inspector point of view, how do inspectors use the OEF information?

Recognizing there is more OEF information regularly generated than can be absorbed and processed by any single individual, inspectors make judicious use of the specific OEF that is applicable to their assigned station, to inform their routine (baseline) inspections. Inspectors communicate the OEF data they learn during their inspection activities to Region management for further review and consideration by operating experience and other staff. OEF is incorporated into inspection procedures and into other inspection instruments such as the Temporary Instruction and OpE Smart Sample for use by inspectors. Scheduled and reactive team inspections are informed by OpE, then used by the assigned inspectors.

B. How does your NOEF programme influence the type of inspections that are performed by the inspectors?

Specific events of higher safety significance are quickly evaluated and a decision is made to conduct a “reactive inspection” in accordance with Management Directive 8.3 and Inspection Manual Chapter 0309. The NOEF programme also provides influence via the inspection feedback forms that are evaluated and used as appropriate to update or improve inspection procedures. Specific, generically applicable OEF issues may require the development and execution of a Temporary Instruction. Such a TI was recently developed and issued to inspectors in the four NRC Regions to inspect and assess licensee activities for immediate response to the OEF from the Fukushima Dai-ichi reactor plant tsunami damage. Generic communications that arise from the NOEF programme process are read by inspectors and used as appropriate in inspection activities to determine what the licensee has done or plans to do to address any concerns in these communications. OEF information provided in the OpE Daily Screening Summary, in OpE COMMunication web-based reports, and in the Inspector Newsletter inform inspectors and can influence the kinds of questions they raise or the activities/conditions they look at as part of their routine baseline inspection activity.

C. How does your NOEF programme influence or is it involved in developing or writing inspection procedures/guidance?

Yes, the NOEF programme is involved in developing/writing inspection procedures/guidance, mainly via the use of Inspection Procedure “Feedback” forms, which are reviewed and appropriately incorporated into inspection procedure by the staff of the Inspection Programme Branch (IRIB), and via the development of OpE Smart Samples, described in more detail in another part of this questionnaire.

D. How (and to whom) do inspectors report the results of their activities related to OEF? Is it required?

Inspectors document the scope and results of their inspections in quarterly routine and, as needed, special inspection reports. These reports are sent to the Region Office where they are reviewed and processed. When finalized, the inspection reports are posted on the NRC Public web page. Yes, written reports are required for their inspection activity, and if OEF was reviewed or identified as part of the inspection, it would be incorporated into the applicable inspection report. OpE Smart Samples are a tool for focusing baseline inspection activity, using OEF information. These tools are not required to be used by inspectors, but if they do use an OpESS, they are requested to document their use of this tool in their inspection report. NRC OEF staff have seen mixed results in the actual documentation of the use of OpESS and are working to improve the consistency of documentation of the use of this information, to help staff improve the programme.

Question 3. Inspection feedback to operational experience feedback programmes

A. How does your NOEF programme receive feedback from the inspectors on the usefulness of the information or suggestions for improvement?

Inspectors routinely comment on information provided to them by Operating Experience staff in a number of ways, including via e-mail, by direct telephone call, and through their management chain in the Regional Offices. Immediately following and often during special or team inspections, the inspection team leader typically contacts the Operating Experience Staff to provide questions and feedback on the usefulness of the operating experience information provided. Members of the OEF staff also receive feedback from inspectors as a group, when the assigned staff member attends the annual Regional Counterparts Meeting, which is attended by all the resident inspectors from all the various sites in the region. The management of the division in which the OEF staff work conducts a bi-weekly teleconference call in which a higher level summary of OEF for the past two weeks is presented and discussed, providing an opportunity for feedback from the regional management to whom the inspectors report. We have found that if we send erroneous information our OEF staff rapidly receives feedback from usually more than one inspector, allowing us to quickly assess and correct any errors. The OEF staff provides a comprehensive monthly input to a monthly Reactor Oversight Process (ROP) call held with regional inspection staff and Regional OpE Points of Contact

(POCs). This report is provided ahead of the call and gives the regional inspection staff an opportunity to comment on the usefulness or focus of NOEF process/products. NOEF staff schedules a quarterly call with our Regional OpE POCs to learn of any concerns and any ideas for process improvement. Twice a year, regional offices and the Headquarters office consider and provide specific comments on the effectiveness and usefulness of the work done by the other offices. Suggestions for improvement, typically at a fairly high level, are included in this process.

B. How has/is your NOEF programme improved by the feedback from the inspectors?

The NOEF programme has undergone significant change and improvement overall since the lessons learned from the Davis Besse reactor vessel head event were evaluated and the program restructured. Individual members of staff, inspectors, and management have all contributed to an ongoing process of continuous improvement to refine and make the NOEF programme more effective. The content and structure of the daily OpE Screening Summary has significantly changed and improved, in part based on feedback from readers, which include inspectors. The focus and content of OpE searches has been improved based on feedback from inspectors who request this type of support, and NOEF staff developed a tutorial to show all staff, including inspectors, how to conduct effective OpE searches on the Reactor Operating Experience Gateway (webpage). By viewing inspectors as key customers, the NOEF staff have continued to improve and strengthen our responsiveness and effectiveness to specific OEF information requests from the regional offices and sites. Inspectors have given programme staff feedback on the kinds of topics they would like to have discussed at the regular Region Counterparts meeting, and NOEF programme staff has developed presentations tailored to these requests, generating positive feedback.

Question 4. General

A. How could your NOEF programme improve its communication with inspectors?

1. The NOEF programme can continue to improve its ability to gather, assess and synthesize OEF information and data then package this information in a way that is most useful to inspectors, to help them keep from getting overwhelmed by the volume of information that emerges on a daily basis. We are interested in what other countries do to ensure they don't go to excess in communications, and how they work to process and send the right information to the right people in a timely manner.
2. The NOEF programme needs to improve the practical usefulness of information that is evaluated and analyzed, in a way to achieve more timely and successful changes to inspection procedures.
3. The NOEF programme needs to continue its efforts to improve the usefulness and documentation of the Operating Experience Smart Sample process, so inspectors will find it to be an even better and more helpful tool than it already is.

B. When deciding on what information to send to inspectors, does your NOEF programme consider the ability of inspectors to absorb and take action on OEF? Put another way, do you ensure inspectors (or related specialists) are not overwhelmed by the volume or technical complexity of OEF that is provided?

Yes. This concern is consistently in the minds of OEF staff and in large part, has been the reason for the streamlining and tailoring of OpE screening summaries and OpE COMMunications. The screening process has improved over the last few years by ensuring that the threshold for screening operating experience issues "IN" for further evaluation and communication, only the most important and useful OEF information is passed on to inspectors. It is recognized that inspectors only have so much time to read all the information they need to conduct their jobs. By keeping the OpE communications brief and to-the-point, and our products sharp and useful, staff continues to provide support to the inspectors and not overwhelm them. This is in part why staff only issues one or two OpE Smart Samples per year. This is a continuous challenge, especially in light of the number of operating reactors that generate OEF in our country and in the world.

C. How does management level interact with or manage operating experience personnel and inspectors to ensure sufficient cooperation?

As noted in answers to several of the other questions in this questionnaire, management of the NOEF programme office is in routine contact with management of the Regional offices responsible for the work and activities of the assigned inspection personnel. Management stays cognizant of NOEF information via daily events briefings, the bi-weekly NOEF updates, monthly ROP teleconference calls, and periodic face-to-face contact in meetings out in the Region offices. Every two weeks, the Branch Chief (BC) of the Operating Experience Branch meets with the Division Director responsible for the NOEF programme to discuss performance, developments, improvement efforts, feedback from the director's Regional Office counterparts and routine activities. Accountability for effective and efficient execution of the programme and for strong support to and cooperation with the inspectors is a key aspect of this meeting.

The NOEF programme headquarters staff includes members who are specifically assigned as the responsible individual for processing and screening operating experience for the plants in a given Region, interacting with Region staff and developing a strong relationship with contacts in the Region, and a partnership with a customer service aspect. NOEF programme staff participate directly in periodic Reactor Oversight Process "re-baseline" reviews, and work closely with inspection programme staff to assess and feed NOEF considerations into updates to all inspection procedures.

Once or twice a year, management and Headquarters staff from the NOEF programme and from the inspection program attend meetings with Regional staff and management, including inspectors, to exchange ideas, concerns and improvement feedback. NOEF programme staff members routinely interact and team with inspection programme staff.

Twice a year, a senior NOEF programme staff member presents an Operating Experience Overview and Analysis Report (OAR) briefing to top management in the Office of Nuclear Reactor Regulation and the Office Directors of the Regional Offices and their deputies. Recommendations on NOEF concerns and high-level direction are part of this briefing. Annually, the NOEF programme BC meets with the Chairman of the Nuclear Regulatory Commission to review NOEF status and concerns.

TOPIC 2.

**OPERATING EXPERIENCE AND INSPECTION INSIGHTS
FROM NON-CONFORMANCE OF SPARE PARTS**

Introduction

The “non-conformance of spare parts” refers to problems raised from replacement parts not conforming to original design standards. Non-conformance may be a result of several issues, such as, the inability to acquisition of original type of spare parts; fabrication might be closed down; changes in type or standards; changes in materials; etc.; chemicals and supportive materials used in components and equipment (safety classified products – deficiencies in their quality or grading bases). These safety-related spare parts are nuclear quality – not warehoused. The issue “Non-conformance in spare parts” came forward in Olkiluoto nuclear power plant in connection of IRS-reported event "Common-cause failure in main steam line outer isolation valve actuator (2009-05-12)“ (IRS 8029).

This topic is timely and important because:

- Non-conformances of replacement (spare) parts of safety-related equipment or systems and supportive materials (lubricants/greases) used in safety-classified systems may lead to unavailability of safety system / inoperability of safety function and elevated risk of severe accident.
- Non-conformances of replacement (spare) parts of safety-related equipment or systems and supportive materials can result to common cause failure.
- Non-conformances or failures of safety-critical replacement (spare) parts if observed at the storage or at the maintenance workshop are not notified or recorded as those observed at the plants and don't always receive the same kind of safety assessment.
- Clarification of an actual root cause of a failure or malfunction resulted from non-conformances of spare parts or supporting material may not be prioritized leading to misinterpretation of failure and to unfavorable decision making e.g. to continue/start-up of production.
- Conformance of spare parts or supportive materials cannot be observed or verified in the acceptance inspection and utility has to trust on manufacture's quality certificate.

The objective of this workshop topic is to share and discuss different operating experiences, approaches and practices for the regulatory inspection of licensee's identification and handling of the non-conformance of spare parts.

Questions

Question 1: Regulatory Actions by Operating Experience (OE)

- A. Has your regulatory body (RB) taken national generic action on non-conformances of spare parts? Please briefly describe your national approach.
- B. Based on OE, what are the main causes identified by your RB (if any) concerning the non conformance of spare parts? Has the licensee(s) identified any different main causes?
- C. Has or will your NOEF programme influence or is involved in developing or writing inspection procedures for the inspection of spare parts? Y/N. Please describe how.
- D. What are the operator's measures to prevent procurement and the installation of counterfeit, fraudulent and suspect items (CSFI)? Has your RB taken action in light of concerns in other countries?

Question 2: Inspections

- A. Does your RB inspect this issue? Does your inspection programme consider the implementation of a specific inspection for spare parts? How?
- B. What OE type of information on the non-conformance of spare parts is provided (or is available) to inspectors? Who provides the information? What are inspectors expected to do with the information?
- C. What is the regulatory body's position regarding the inspection that the operator's measures to avoid CSFI? Describe the specific guidance for inspectors regarding CSFI.

Question 3: Inspection feedback

- A. How do the inspectors report results? To whom (especially, if it includes NOEF programme)? Is it required that they report back the results?
- B. Does your RB plan to take any actions with the compilation of all of the inspector's results from non-conformance inspections? If so, please describe.

Belgium

The “non-conformance of spare parts” refers to problems raised from replacement parts not conforming to original design standards. For this topic, we are addressing safety-related spare parts are nuclear quality. Non-conformance may be a result of several issues, such as, the inability to acquisition of original type of spare parts; fabrication might be closed down; changes in type or standards; change in materials; chemicals and supportive materials used in components and equipment; deficiencies in quality or grading bases; ability to trace warehoused parts. The issue “Non-conformance in spare parts” came forward to WGOE as a result of the incident at Olkiluoto nuclear power plant, IRS-reported event IRS 8029, “Common-cause failure in main steam line outer isolation valve actuator (2009-05-12)”. A related issue on this topic is the willful deceit of a part to be sold of a standard or type that is it not, called counterfeit, suspect and fraudulent items (CFSI).

This topic is timely and important because:

- Non-conformances of replacement (spare) parts of safety-related equipment or systems and supportive materials (lubricants/greases) used in safety-classified systems may lead to unavailability of safety system/inoperability of safety function and elevated risk of severe accident.
- Non-conformances of replacement (spare) parts of safety-related equipment or systems and supportive materials can result to common cause failure.
- Non-conformances or failures of safety-critical replacement (spare) parts if observed at the storage or at the maintenance workshop are not notified or recorded as those observed at the plants and don’t always receive the same kind of safety assessment.
- Clarification of an actual root cause of a failure or malfunction from nonconformances of spare parts or supporting material may not be prioritized leading to misinterpretation of failure and to unfavorable decision making e.g. to continue/start-up of production.
- Conformance of spare parts or supportive materials cannot be observed or verified in the acceptance inspection and utility has to trust on manufacture’s quality certificate.

The regulatory body verifies that the procurement process licensees and their activities related to the replacement of qualified spare-parts are being conducted in an appropriate manner. The objective of this workshop topic is to share and discuss different operating experience and approaches and practices for the regulatory inspection of licensee’s identification and handling of the non-conformance of spare parts.

Question 1. Regulatory Actions by Operating Experience (OE)

A. *Has your regulatory body (RB) taken national generic action on non-conformances of spare parts? Please briefly describe your national approach.*

A “precursor” step was taken after the publication of NRC Bulletin 87-02 “FASTENER TESTING TO DETERMINE CONFORMANCE WITH APPLICABLE MATERIAL SPECIFICATIONS”. A letter was written to the Utility and the situation was checked for each NPP through inspection of the bolts procurement and spare parts quality assurance system.

A second step was achieved in 2009-2010 with an inspection campaign on the way contracted services are handled by the licensee. This seems to be a key topic in assuring the compliance of works and spare parts.

B. *Based on OE, what are the main causes identified by your RB (if any) concerning the non conformance of spare parts? Has the licensee(s) identified any different main causes?*

Original manufacturers disappeared.

(Sub-) contractors / suppliers of manufacturers changed their fabrication processes or some characteristics (materials used,...) without notifying them to the manufacturer/assembler or licensee, or without verification that the changes done were still in compliance with the requirements.

Bad identification of the spare parts to be bought (for instance based on a color code that was modified or following confusion between two very similar reference numbers).

C. *Has or will your NOEF programme influence or is involved in developing or writing inspection procedures for the inspection of spare parts? Y/N Please describe how.*

No. In the frame of our ISO 9001 processes (and the related commitment for continuous improvement), we want to develop this topic in our inspections.

D. *What are the operator's measures to prevent procurement and the installation of counterfeit, fraudulent and suspect items (CSFI)? Has your RB taken action in light of concerns in other countries?*

Up to now Belgian Regulatory Body didn't take actions to prevent procurement and installation of CSFI.

Question 2. Inspections

A. *Does your RB inspect this issue? Does your inspection programme consider the implementation of a specific inspection for spare parts? How?*

No. See answer on question 1.A.

B. *What OE type of information on the non-conformance of spare parts is provided (or is available) to inspectors? Who provides the information? What are inspectors expected to do with the information?*

Information is given on a case-by-case basis (following identification of problem by licensee). Inspectors have to write down the received information in their reports. This information is available among others to OEF personnel. Inspectors are also expected to proactively share this information with OEF personnel.

C. *What is the regulatory body's position regarding the inspection that the operator's measures to avoid CSFI? Describe the specific guidance for inspectors regarding CSFI.*

Up to now we have no view on how the licensee faces this potential threat.

No specific guidance has been issued from the RB until now.

Question 3. Inspection feedback

A. *How do the inspectors report results? To whom (especially, if it includes NOEF programme)? Is it required that they report back the results?*

Inspectors have to write down the received information in their reports. This information is available to all the RB personnel, and especially to OEF personnel. Inspectors are also expected to proactively share this information with OEF personnel.

B. *Does your RB plan to take any actions with the compilation of all of the inspector's results from non-conformance inspections? If so, please describe.*

Yes, but no specific action has been taken up to now, except for a first step (general inspection on the way contracted services are handled by licensee).

Canada

The topic “non-conformance of spare parts” refers to problems raised from replacement parts not conforming to original design standards. For this topic, we are addressing safety-related spare parts that are nuclear quality.

Non-conformance may be a result of several issues, such as, the inability to acquire the original type of spare parts; changes in type or standards; changes in materials; chemicals and supportive materials used in components and equipment; deficiencies in quality or grading bases; ability to trace warehoused parts.

The issue “*Non-conformance in spare parts*” came forward to WGOE as a result of the incident at Olkiluoto nuclear power plant, IRS-reported event IRS 8029, “Common-cause failure in main steam line outer isolation valve actuator (2009-05-12)”. A related issue on this topic is the wilful deceit of a part to be sold of a standard or type that is it not called counterfeit, fraudulent, and suspect items (CFSI).

This topic is timely and important because:

- Non-conformances of replacement (spare) parts and supportive materials (lubricants/greases) used in safety-classified systems may lead to unavailability of safety system/inoperability of safety functions and elevated risk of severe accident.
- Non-conformances of replacement (spare) parts of safety-related equipment or systems and supportive materials can lead to common cause failures.
- Non-conformances or failures of safety-critical replacement (spare) parts if observed at storage or maintenance workshops may not be noticed or recorded as those observed at the plants and therefore don’t always receive the same kind of safety assessment.
- Clarification of an actual root cause of a failure or malfunction resulting from non-conformances of spare parts or supporting material may not be prioritized leading to misinterpretation of failure and to unfavourable decision making e.g. to continue/start-up of production.
- Conformance of spare parts or supportive materials cannot be observed or verified in the acceptance inspection and utility has to trust the manufacture’s quality certificate.

The regulatory body verifies that the procurement process licensees and their activities related to the replacement of qualified spare-parts are being conducted in an appropriate manner. The objective of this workshop topic is to share and discuss different operating experience and approaches and practices for the regulatory inspection of licensee’s identification and handling of the non-conformance of spare parts.

Question 1. Regulatory Actions by Operating Experience (OE)

A. Has your regulatory body (RB) taken national generic action on non-conformances of spare parts? Please briefly describe your national approach.

Yes, the CNSC has taken generic action on this issue.

There are obligatory procurement quality assurance requirements included in the operating licence of every Canadian NPP. The license references the CSA N286 series of standards.

CNSC staff carries out inspections and audits to verify compliance with procurement quality assurance requirements. The goal is to ensure all Canadian NPP licensees comply with the requirements of the CSA standard on Procurement Quality Assurance, which is referenced in the NPP licences, such that all procured items and materials meet specified technical (e.g., N285 series of standards, ASME Code, etc.) and regulatory requirements.

CNSC staff has also observed licensee staff audits.

More recently, the CNSC has started a dialog with licensee procurement audit organizations such as NUPIC and CANPAC.

There are also regulatory requirements which oblige NPP licensees to report the discovery of all instances where the as-found (or actual) NPP equipment and components are different from the as-designed systems for all systems important to safety.

B. Based on OE, what are the main causes identified by your RB (if any) concerning the non conformance of spare parts? Has the licensee(s) identified any different main causes?

No main cause(s) have been identified by the RB to date.

No main cause(s) have been identified by the licensee(s) to date.

C. Has or will your NOEF programme influence or is involved in developing or writing inspection procedures for the inspection of spare parts? Y/N Please describe how.

Yes. Incoming relevant and applicable OPEX information may have an impact on the development or revision of the CNSC inspection procedures and guides. Incoming relevant OPEX information may also have an impact on the compliance activities conducted by the CNSC Site Inspectors. Additional reactive compliance activities may be conducted; these may include reactive inspections, documentation reviews, or changes to the scope of planned or ongoing inspections.

CNSC Site Inspectors also ensure licensee staff is aware of any relevant incoming OPEX information and that any required preventive or corrective measure is implemented.

D. What are the operator's measures to prevent procurement and the installation of counterfeit, fraudulent, and suspect items (CSFI)? Has your RB taken action in light of concerns in other countries?

Presently, there are no regulatory requirements directing licensees to implement processes specifically to prevent the introduction of CSFI in the supply chain. There are however, obligatory procurement quality assurance requirements included in the operating license of every Canadian NPP. These are reference in CSA N286 series of standards.

Canadian licensees consider that CSFI has not posed a challenge to NPP safe and efficient operation up to the present time. However, CSFI is recognized as an emerging issue, primarily based on the growing incidence of CFSI events being reported in the US and Europe.

To date, there has been no validated case of CFSI having been installed in a Canadian NPP. Despite this, it is felt that controls need to be put in place by the Canadian NPPs to minimize the potential risks associated with the introduction of CSFI.

Additional steps are being evaluated for incorporation into NPP processes. Internal and inter-utility discussions through the CANDU Owners Group (COG) are routinely held. CSFI is also addressed through licensees' auditing involvement via the CANDU Procurement Audit Committee (CANPAC).

CANPAC is a joint program managed by COG, whose role is to audit the quality programs of suppliers/contractors common to CANDU licensees. Recently, CANPAC undertook the following actions:

- CANPAC auditors were sent to CFSI awareness training (Nov 2009 and August 2010). All CANPAC auditors have attended CFSI awareness training over the past year and will continue to upgrade skills as more comprehensive training becomes available. As of yet, there is no common approach used at all Canadian NPPs.
- CANPAC prepared and issued a CFSI letter to over 250 CANPAC audited suppliers/contractors. The letter directed the suppliers to document and start implementing a process for the prevention and detection of CFSI. The letter also indicated that CANPAC would be auditing their CFSI process at the supplier's next scheduled audit.

- CFSI questions were added to the CANPAC audit checklists and CSFI training was delivered to the auditors.
- CANPAC began to audit suppliers/contracts using the revised checklists in early September 2010.
- CANPAC auditors will now issue Corrective Action Requests whenever a supplier has no CFSI process in place or if the CSFI process is deemed ineffective.

Current activities or plans also include the formation of a COG working group to develop a common approach to CSFI activities at Canadian NPPs using the same processes and reporting structure.

- Some Canadian licensees have increased staff training and awareness programs to recognize the potential for CSFI entering the supply chain. In particular, additional training is given to Receipt Inspection staff and Source Inspection personnel. In parallel with the process development, OPEX is being used to establish additional inspection equipment as part of the identification steps.
- Licensee Design and Procurement Engineering staff is typically responsible for the development of technical specifications, datasheets, catalogue items selection documentation and quality records requirement for all purchased product for new and replacement items.
- Licensee Design and Procurement Engineering staff draft purchase orders with regard to disposition of non-conformances and all use as is and repair dispositions, which affect form-fit-function, are subject to station approval.
- Licensee Design and Procurement Engineering staff evaluates and select suppliers based on their technical capability and implemented quality program. Some licensees include assessment of the supplier's processes and practices implemented to detect and prevent the use of CFSI.
- Licensee Design and Procurement Engineering staff is also involved in determining the suitability of application, assignment of quality attribute; designation of the critical characteristics required to be inspected and verified (including steps for CFSI checks), product testing of complex designs and disposition of non-conformances and concession applications. Engineering staff is also involved with supplier selection when the commercial grade dedication (CGD) process is initiated or when contracted engineering services are required.
- Both groups are also involved in evaluation and disposition of non-conformances. Procurement Engineering (PE) is responsible for coding of items, which includes the assignment of technical and quality attributes. PE are also responsible for developing Purchasing Codes that incorporate incoming inspection requirements

Some licensees incorporate additional clauses in their Purchase Order terms and conditions aimed at eliminating CSFI however; most do not and this has been identified as an issue. The CANDU industry first needs to identify the legal terms and conditions required for contractual language, and then develop a generic CFSI Procurement Clause that could be used throughout the industry. The Canadian approach is aligned with the US DOE/ DOD clauses and based on the EPRI proposal.

There is an increasing awareness that, with the globalization of the supply chain, existing supplier controls on the industry may not be adequate to counteract the growing risk of CSF items in the nuclear industry.

There is little likelihood of CSFI in CANDU core components and special safety system components, as the main components suppliers are unique, controlled, inspected and components are often verified at the manufacturers prior to shipping to site as well as upon receipt at site by licensees.

To date, there has been no validated case of CFSI having been installed in a Canadian NPP. There have been some cases of suspect and incorrect items being discovered after installation and instances of items not meeting specifications or with inadequate documented traceability

The CNSC believes that the likelihood of introduction of CSFI pertain to commonplace components such as standard mechanical devices and components (piping, valves and fasteners), and ubiquitous electrical and electronic components, mostly for common process systems.

Presently the CNSC has not developed any policy or procedure for preventing, detecting, reporting and prosecuting cases of CSFI. The lack of a uniform terminology about CSFI has been identified as a required first step to begin addressing the challenge presented by CSFI.

The CNSC does monitor and audit licensees' procurement processes and controls. The object is to ensure they comply with the requirements of the CSA Standard on Procurement Quality Assurance, referenced in their licences, that all procured items and materials meet specified technical (e.g., N285 series of standards, ASME Code, etc.) and regulatory requirements. CNSC staff carries out inspections and audits to verify compliance with procurement quality assurance requirements.

The CNSC has begun participating occasionally as observer in licensee audits. More recently, the CNSC has started a dialog with licensee procurement audit organizations such as NUPIC and CANPAC.

The CNSC does not have other requirements to prevent and to respond to the use or introduction of CSFI but is considering adding specific CSFI reporting requirements in the reporting requirements referenced in NPP licences.

Should licensee-introduced measures prove less than adequate to preclude introduction of CSFI in Canadian NPPs, the CNSC would have the option at some time in the future, to consider introducing additional regulatory requirements to address the situation.

Question 2. Inspections

A. Does your RB inspect this issue? Does your inspection programme consider the implementation of a specific inspection for spare parts? How?

The CNSC does monitor and audit licensees' procurement processes and controls. The object is to ensure they comply with the requirements of the CSA Standard on Procurement Quality Assurance, referenced in their licences, that all procured items and materials meet specified technical (e.g., N285 series of standards, ASME Code, etc.) and regulatory requirements. The CNSC staff carries out inspections and audits to verify compliance with procurement quality assurance requirements.

The CNSC has begun participating occasionally as observer in licensee audits. More recently, the CNSC has started a dialog with licensee procurement audit organizations such as NUPIC and CANPAC.

B. What OE type of information on the non-conformance of spare parts is provided (or is available) to inspectors? Who provides the information? What are inspectors expected to do with the information?

All Canadian NPP licensees are required to report operating event information in accordance with the CNSC Regulatory Standard S-99 – Reporting Requirements for Operating Nuclear Power Plants.

There is no specific requirement addressing the reporting of non-conformance of spare parts. There are however requirements that would oblige Canadian NPP licensees to report the discovery of instances where the actual equipment and components are different from the as-designed systems for all systems important to safety.

Event information provided by the licensees is coded and input into a centralized event database called CERTS (Central Event Reporting and Tracking System). Approximately 400 event reports are input into the CERTS database every year making it a very important source of Canadian NPP OPEX knowledge.

Both CNSC Site Inspectors (resident inspectors) and CNSC Technical staff located at the CNSC Headquarters have access to CERTS operating event data and can perform OPEX searches or trends as required for the conduct of regulatory work.

Additionally, CNSC Site Inspectors (resident inspectors) also have access to licensee OPEX staff and OPEX databases.

The Senior CNSC Site Inspectors from each NPP Site exchange incoming Canadian OPEX information (licensee issues which may impact other sites and generic technical developments) during a weekly teleconference.

OPEX information resulting from trending or from event assessments by CNSC Technical staff located at the CNSC Headquarters is conveyed to the impacted CNSC NPP Site Office(s) in an ad-hoc manner as appropriate.

Incoming international OPEX information is screened by CNSC Technical staff located at the CNSC Headquarters and then conveyed to the impacted CNSC NPP Site Office(s) in an ad-hoc manner as appropriate.

OPEX information is also presented and discussed at the All-Site Inspector meeting which is held twice a year. Most of the OPEX information is provided by the Canadian NPPs through mandatory reporting.

The IAEA IRS system is another important source of OPEX data for CNSC staff.

CNSC Site Inspectors (resident inspectors) also have direct access to licensee OPEX staff and OPEX databases. They are required to review and confirm the relevance of the OPEX information they receive and determine whether the OPEX information applies to the specific facility they are responsible for inspecting. CNSC Site Inspectors are also expected to share OPEX information which may be relevant to other CNSC licensed facilities. CNSC Site Inspectors are required to ensure relevant and applicable OPEX information is communicated to the licensee and that any required preventive or corrective measure is implemented. This can be done informally for simple items of low safety significance or very formally through written requests and/or orders for complex items of high safety significance.

Incoming relevant and applicable OPEX information may have an impact on the compliance activities conducted by the CNSC Site Inspectors. Additional reactive compliance activities may be conducted; these may include reactive inspections, documentation reviews, or changes to the scope of planned or ongoing inspections.

C. What is the regulatory body's position regarding the inspection that the operator's measures to avoid CSFI? Describe the specific guidance for inspectors regarding CSFI.

The CNSC maintains on-site offices staffed by full-time inspectors at all operational nuclear power plants in Canada. Individual site offices are set up at the beginning of plant construction and remain staffed until completion of major decommissioning activities. Specific resources have not yet been assigned to train the inspectors for detection of CSFI.

During licensing, construction and throughout a plant's operational life, CNSC Quality Management Specialists are involved in audit activities and inspections against CSA design and procurement quality assurance standards; they carry out verification of licensees' documentation and programs along with audits of licensees' supply chain processes in collaboration with the site inspectors.

As a regulator the CNSC has not yet identified best practices for the industry to protect against the risk of CSFI on nuclear plant safety. Many NPP licensees have developed excellent and detailed procurement processes to preclude the possibility of CSFI of entering the supply chain.

Specific resources have not yet been assigned to train the inspectors for detection of CSFI.

Question 3. Inspection feedback

A. How do the inspectors report results? To whom (especially, if it includes NOEF programme)? Is it required that they report back the results?

The results of all CNSC site inspections, including those related to OEF, are formally reported to the CNSC Regulatory Program Director who has overall responsibility for the inspected NPP. It is a CNSC internal requirement.

CNSC Site Inspectors provide feedback on the OPEX information they received in an ad-hoc manner as appropriate.

OPEX information resulting from trending or from event assessments by CNSC Technical staff located at the CNSC Headquarters is conveyed directly to the Site Supervisor who has the level of technical expertise and ability required to absorb and take action as appropriate. Additionally, Technical staff located at the CNSC Headquarters remain available to provide technical support or clarification to the Site Inspectors should it be required.

B. Does your RB plan to take any actions with the compilation of all of the inspector's results from non-conformance inspections? If so, please describe.

The results of all CNSC site inspections, including those related to spare parts non-conformance, are formally reported to the CNSC Regulatory Program Director who has overall responsibility for the inspected NPP. The CNSC Regulatory Program Director ensures that any required preventive or corrective measure is implemented. This can be done informally for simple items of low safety significance or very formally through written requests and/or orders for complex items of high safety significance. The CNSC Regulatory Program Director normally consults with the CNSC Site Inspectors and the CNSC Technical staff located at the CNSC Headquarters when making decisions in this area.

Czech Republic

Question 1. Regulatory Actions by Operating Experience (OE)

1. *Has your regulatory body (RB) taken national generic action on non-conformances of spare parts? Please briefly describe your national approach.*

SUJB has not taken many generic actions so far. One example could be an official letter to the licensee and a fine resulting from inspection that revealed such a non-conformance. However, situation is eased by the fact that there is only one licensee operating NPPs, SUJB urges that any experience of significant non-conformances be directly transmitted to the other plant as well.

2. *Based on OE, what are the main causes identified by your RB (if any) concerning the non conformance of spare parts? Has the licensee(s) identified any different main causes?*

RB:

Licensee's oversight of contractors.

Licensee:

QA requirements not used or not met during procurement process.

Personnel work practices during construction.

Inadequate review of design changes.

Ageing of component.

Component monitoring inadequate.

3. *Has or will your NOEF programme influence or is involved in developing or writing inspection procedures for the inspection of spare parts? Y/N. Please describe how.*

No

4. *What are the operator's measures to prevent procurement and the installation of counterfeit, fraudulent and suspect items (CSFI)? Has your RB taken action in light of concerns in other countries?*

The operator has made a corrective action that all spare parts are to be obtained directly from the producer.

Example from RB: SUJB obtained detailed information about one specific CSFI issue in Ukraine NPP. As this NPP is of the same WWER type SUJB addressed the operator. The operator has confirmed knowledge of this issue and confirmed that this issue does not apply to NPPs in the Czech Republic.

Question 2. Inspections

1. *Does your RB inspect this issue? Does your inspection programme consider the implementation of a specific inspection for spare parts? How?*

Yes, coincidentally, an inspection regarding maintenance process is going on. There is no specific inspection on spare parts. However, inspectors are present at receive inspection of spare parts occasionally and they do have findings.

2. *What OE type of information on the non-conformance of spare parts is provided (or is available) to inspectors? Who provides the information? What are inspectors expected to do with the information?*

As inspectors directly participate in the OEF programme they receive full information regarding the spare parts. Should this be the case they are asked to participate by the OEF coordinator in advance.

Inspectors are expected to use the information during their inspections and assessments (the same case as any other OEF information).

- 3. *What is the regulatory body's position regarding the inspection that the operator's measures to avoid CSFI? Describe the specific guidance for inspectors regarding CSFI.***

This topic is covered in regular OEF inspections. Yet, there is no specific guidance for it.

Question 3. Inspection feedback

- 1. *How do the inspectors report results? To whom (especially, if it includes NOEF programme)? Is it required that they report back the results?***

The results are reported in inspection reports.

These reports are handed over to the operator and passed to the SUJB management via internal inspection evaluations.

Yes, it is required to report back the results.

- 2. *Does your RB plan to take any actions with the compilation of all of the inspector's results from non-conformance inspections? If so, please describe.***

Coincidentally, an inspection regarding all maintenance process is going on.

Finland

Question 1. Regulatory Actions by Operating Experience (OE)

A. *Has your RB taken national generic action on non-conformances of spare parts? Please briefly describe your national approach.*

Operator shall prove the conformance of SSCs with applicable tests, feasibility studies or operational experience. Replacement parts shall be original or not less than equivalent to original ones by their quality. As non-original spare parts are introduced there are inspection requirements similar to SSCs before putting into service. If, however, failures occur with safety significant spare parts, operator is obliged to present root cause analysis and corrective actions.

There has been a couple of incidents at TVO where a quality of a spare part has contributed an incident. Approach has been to establish why it has been possible to deliver spare parts that have been of altered quality. The whole chain from the subcontractors to the site must be inspected and the chain has to be audited to ensure the traceability of the components all through the chain.

B. *Based on OE, what are the main causes identified by your RB (if any) concerning the non conformance of spare parts? Has the licensee(s) identified any different main causes?*

There has been no single cause to be identified. Spare part manufacturer has changed some structural details, e.g. cladding material, without informing the operator and the modification has not been found successful in operation. Consumables may have expired in the spare part supply.

The lengthening of the supplier - chain can cause some disturbance. E.g it might not be known to the subcontractor that all the smallest components must be those identified in the agreements.

C. *Has or will your NOEF programme influence or is involved in developing or writing inspection procedures for the inspection of spare parts? Y/N Please describe how.*

Inspection procedures for various nuclear power plant safety significant SSCs have been issued by STUK and spare parts of SCCs are inspected following the same procedures as SCCs they are belong to. Operational feedback experience is systematically used in writing these inspection procedures in order to improve their effectiveness.

D. *What are the operator's measures to prevent procurement and the installation of counterfeit, fraudulent and suspect items (CSFI)? Has your RB taken action in light of concerns in other countries?*

Proven quality assurance and control systems covering, by applicable parts, spare part procurement specification, manufacturing control, acceptance procedures at factory and at arrival to site, stocking and installation.

Every time the operator hears a case, it inspects comparable components, systems, contracts and the acceptability as well as auditing and documentation processes.

Question 2. Inspections

A. *Does your RB inspect this issue? Does your inspection programme consider the implementation of a specific inspection for spare parts? How?*

STUK implements an inspection program for Finnish nuclear power plant operators on annual basis. The program consists of various separate inspection subjects and one regularly repeated subject is spare part management.

B. What OE type of information on the non-conformance of spare parts is provided (or is available) to inspectors? Who provides the information? What are inspectors expected to do with the information?

Operators are obliged to report to STUK of identified non-conformances, including spare part failures. Spot checks regarding spare part procurement, availability and compliance with the requirements are done when implementing the annual inspection program. If non-conformances are then found, inspectors may set requirements and deadline for corrective actions.

Different reporting systems (IRS, WANO, ERFATOM, VVER) are available for operators. These reports are available and they are reported as soon as they are published. Inspectors have also their own contacts in Europe and they receive information from these two. Operation Experience Group provides further information handled in the meetings. Inspectors are supposed to learn on others experiences and take extra concern if problems have reported from NPP's and especially from those who have same kind of systems and same components or same contractors / subcontractors.

C. What is the regulatory body's position regarding the inspection that the operator's measures to avoid CSFI? Describe the specific guidance for inspectors regarding CSFI.

Inspectors witness the reception of spare parts and perform inspections according to a QC plan of the procurement. Resident inspectors have also access to operators' plant data system and can gain OE from a specific spare part. Findings from these processes serve as guidance in the short and long term.

Question 3. Inspection feedback

A. How do the inspectors report results? To whom (especially, if it includes NOEF programme)? Is it required that they report back the results?

Inspectors may report the results using dedicated inspection reports and major issues are also reported to a group which has a meeting every second week with spare parts being one subject on the agenda.

B. Does your RB plan to take any actions with the compilation of all of the inspector's results from non-conformance inspections? If so, please describe.

Feedback from all disciplines is coordinated and compiled. This feedback helps to focus on the potential non-conformances when planning the future annual inspection programs.

France

Question 1: Regulatory Actions by Operating Experience (OE)

A. Has your regulatory body (RB) taken national generic action on non-conformances of spare parts? Please briefly describe your national approach.

Spare parts topics are usually dealt with on a case by case basis. Therefore, when a problem related to specific spare parts arises, generic actions are taken on this specific problem.

At first, the licensee have to notify to ASN any modification which can have an impact on safety, the environment or people. The operator's files ensure a minimum level of analysis of modification related to important equipments and the identification of spare parts problems linked to ageing, obsolescence or changes of parts for different ones.

A generic draft of guidance for dealing with non compliance on NPP is being written by ASN. Non compliance in general includes non conformance of spare parts.

In 2011, a specific inspection was carried out in the operator's national level organization on the topics of obsolescence and maintaining qualification for accident conditions. During this inspection, spare parts topics related to obsolescence and qualification were addressed. The conclusions of this inspection will be used to establish guidance to further on-site inspections this year and finally to take generic actions when needed.

B. Based on OE, what are the main causes identified by your RB (if any) concerning the non conformance of spare parts? Has the licensee(s) identified any different main causes?

The main causes identified by ASN are :

- manufacturer's quality insurance problems (for example : unavailability of a part of the safety injection system due to the fact that a shunt was apparently forgotten on a pump motor during manufacturing and was not found absent by the manufacturer's controls) ;
- manufacturer's non compliance to the operator's specifications ;
- technology evolutions not identified to have a potential impact on spare parts (for example : ball bearings technology evolved in the factory and the changes were not reported to the operator. The new technology did not fully match accident requirements);
- closing out of a manufacturer leading to the use of slightly different parts;
- human errors (for example : mixing of greases in motors).

The licensee did not identified other main causes.

C. Has or will your NOEF programme influence or is involved in developing or writing inspection procedures for the inspection of spare parts? Y/N Please describe how.

In the past, OEF has triggered the implementation of inspections on the topic of obsolescence. Inspection procedures related to obsolescence are currently being drafted.

Spare parts topic may be reviewed during inspections conducted on the topic of maintenance program.

Verification of the implementation of corrective actions following events involving spare parts may be done through procedures asking the inspectors to control some particular licensee operations during plant outages.

D. What are the operator's measures to prevent procurement and the installation of counterfeit, fraudulent and suspect items (CSFI)? Has your RB taken action in light of concerns in other countries?

The operator has a central national service which is in charge of managing spare parts. At first, this organization has filtered out some problems of uncontrolled supplies possibly coming from non specific local manufacturers.

The operator's organization has set up categories of spare parts :

- C1 : spare parts for which the operator has technical specifications, under a particular supervisory control by operator's units regarding oversight, documentations and factory tests. These parts are ordered to manufacturers following strict rules, under specific files for parts playing a role during accidents ;
- C3 IMP : spare parts which may be mounted on equipment important for safety, qualified to operate during accidents, and ordered only from the manufacturer which has made the qualification tests on its own products or supplied by another manufacturer according to the reference file specifications ;
- C3 : other parts, corresponding to standard industry specifications. These parts might be found to be counterfeited, but they are most of the time ordered directly from manufacturers (no middleman) or manufacturers of C1 and C3 IMP parts, which guarantee a certain level of protection against counterfeiting.

On top of that, the operator has a national unit in charge of manufacturer's monitoring, as required by article 4 of the "quality" order of August 10th 1984 that stipulates that the operator must define organisational provisions in order to define technical inspections adapted to each quality related activity.

Following the WGOE meeting of 2010, September the 28th and the presentations of the concerns of other countries on CSFI, ASN has issued a questionnaire to the operator. It has still not be answered.

Question 2: Inspections

A. Does your RB inspect this issue? Does your inspection programme consider the implementation of a specific inspection for spare parts? How?

Spare parts are not a specific topic of inspections in France.

Nonetheless, this topic may be included (there is no requirement) in on-site inspections carried out on the topic of maintenance.

Inspections are carried out in the central operator organization on topics of qualification of equipment and obsolescence management. These topics are closely related to spare parts topic.

ASN is not presently considering the implementation of specific inspections for spare parts.

B. What OE type of information on the non-conformance of spare parts is provided (or is available) to inspectors? Who provides the information? What are inspectors expected to do with the information?

The operator must report non conformance (Any deviation from a requirement defined for the performance or result of a quality related activity, any situation liable to compromise the defined

quality or any situation justifying corrective action with respect to safety) to ASN under an event or anomaly report. The inspectors have full access to these reports.

That's all which is provided to local inspectors.

National inspectors have information discussed between ASN's NPP OEF unit (see topic 1). For example, during the last quarterly meeting between ASN, IRSN and the operator, 3 events discussed in details referred to spare parts topic.

C. What is the regulatory body's position regarding the inspection that the operator's measures to avoid CSFI? Describe the specific guidance for inspectors regarding CSFI.

As CSFI is presently not currently a growing challenge in France, work on this topic is in progress. There is currently no guidance for inspectors regarding CSFI.

Question 3: Inspection feedback

A. How do the inspectors report results? To whom (especially, if it includes NOEF programme)? Is it required that they report back the results?

Letters following inspections are forwarded to the national level inspector when referring to his national topics.

An internal report and a letter must be issued for every inspection.

A yearly report is issued for every NPP, assessing OEF topics.

There is no further requirement.

B. Does your RB plan to take any actions with the compilation of all of the inspector's results from non-conformance inspections? If so, please describe.

Not presently, mainly because these kind of inspections will be conducted in 2011.

The results of inspections are periodically assessed. If spare parts problems were to rise, there would be a compilation of inspection results and an analysis.

Germany

The “non-conformance of spare parts” refers to problems raised from replacement parts not conforming to original design standards. For this topic, we are addressing safety-related spare parts are nuclear quality. Non-conformance may be a result of several issues, such as, the inability to acquisition of original type of spare parts; fabrication might be closed down; changes in type or standards; change in materials; chemicals and supportive materials used in components and equipment; deficiencies in quality or grading bases; ability to trace warehoused parts. The issue “*Non-conformance in spare parts*” came forward to WGOE as a result of the incident at Olkiluoto nuclear power plant, IRS-reported event IRS 8029, “Common-cause failure in main steam line outer isolation valve actuator (2009-05-12)”. A related issue on this topic is the willful deceit of a part to be sold of a standard or type that is it not, called counterfeit, suspect and fraudulent items (CFSI).

This topic is timely and important because:

- Non-conformances of replacement (spare) parts of safety-related equipment or systems and supportive materials (lubricants/greases) used in safety-classified systems may lead to unavailability of safety system/inoperability of safety function and elevated risk of severe accident.
- Non-conformances of replacement (spare) parts of safety-related equipment or systems and supportive materials can result to common cause failure.
- Non-conformances or failures of safety-critical replacement (spare) parts if observed at the storage or at the maintenance workshop are not notified or recorded as those observed at the plants and don’t always receive the same kind of safety assessment.
- Clarification of an actual root cause of a failure or malfunction resulted from nonconformances of spare parts or supporting material may not be prioritized leading to misinterpretation of failure and to unfavorable decision making e.g. to continue/start-up of production.
- Conformance of spare parts or supportive materials cannot be observed or verified in the acceptance inspection and utility has to trust on manufacture’s quality certificate.

The regulatory body verifies that the procurement process licensees and their activities related to the replacement of qualified spare-parts are being conducted in an appropriate manner. The objective of this workshop topic is to share and discuss different operating experience and approaches and practices for the regulatory inspection of licensee’s identification and handling of the non-conformance of spare parts.

Question 1. Regulatory Actions by Operating Experience (OE)

A. Has your regulatory body (RB) taken national generic action on non-conformances of spare parts? Please briefly describe your national approach.

Up to now, the RB has taken no special national generic action on non-conformances of spare parts.

The national approach is that the overall procedure of dealing with spare parts is fixed in the quality assurance (QA) programmes of the operators. OE leads to improvements in the QA programmes, e.g. concerning the selection of a manufacturer, in-process surveillance in the manufactory plant or receiving inspections of spare parts in the NPP. The requirements for the QA programmes are content of a KTA (Kerntechnischer Ausschuss – Nuclear Safety Standards Commission) safety standard, namely KTA 1401 “General Requirements Regarding Quality Assurance”. This safety standard is regularly revised (at least any 5 years).

In principle, the handling of important OE in the field of non-conformances of spare parts is the same as in other OE fields described in Topic 1. This includes e.g. the NOEF programme, especially GRS information notices, and discussions in the permanent Federation-Länder Committees for Nuclear Energy (LAA) or in the Reactor Safety Commission (RSK).

B. Based on OE, what are the main causes identified by your RB (if any) concerning the non-conformance of spare parts? Has the licensee(s) identified any different main causes?

Basically, there is a common understanding of RB and licensee(s) about the main causes identified of non-conformance of spare parts:

- Original manufacturer not available either due to closure or acquisition.
- Shifting of fabrication abroad.
- Outsourcing.
- Inadequate quality of review documents, especially incomplete specification of safety relevant issues.
- Inadequate experience of the manufacturer in the nuclear field and its special requirements.

C. Has or will your NOEF programme influence or is involved in developing or writing inspection procedures for the inspection of spare parts? Y/N Please describe how.

The NOEF programme itself does not significantly influence the inspection procedures, but the results gained within the programme may have influence (see also topic 1, question 2 C).

D. What are the operator's measures to prevent procurement and the installation of counterfeit, fraudulent and suspect items (CSFI)? Has your RB taken action in light of concerns in other countries?

Measures taken by the operator in the framework of its QA programme:

- Using a database of the VGB (association of German and specific European power plant operators) about certificate manufactures and the respective experiences with them.
- Audits according to KTA 1401 and ISO 9001.
- In-situ surveillance at the manufacturer.
- Acceptance checks of spare parts and products in the NPP.

Action taken by the RB in light of concerns in other countries:

- GRS information notice about the IRS-reported event at Olkiluoto mentioned above in the lead paragraph.
- Evaluation of applicability to German plants of an incident at Trillo NPP with control rods.

Question 2. Inspections

A. Does your RB inspect this issue? Does your inspection programme consider the implementation of a specific inspection for spare parts? How?

Yes. The inspections of the supervisory authorities and their authorized experts respectively comprise:

- In-situ surveillance at the manufacturer
- Spot checks of the receiving inspections of the operator
- Regular checks of on-site storage and delivery of spare parts

The supervisory authority's inspection programme includes the inspection of the QA measures of the operator on a regular basis and the checks mentioned above. The QA of the acceptance checks and the warehouse storage are explicitly considered in the inspection programme.

B. What OE type of information on the non-conformance of spare parts is provided (or is available) to inspectors? Who provides the information? What are inspectors expected to do with the information?

The basic information about spare parts to inspectors includes data about the manufacturer, the date of construction and details about the production processes.

The information about systematic deficiencies are provided by the NOEF programme, e.g. by GRS information notices. Based on the comments by the operator, the inspectors are expected to evaluate the

applicability to its own plant and, if applicable, to supervise if all remedial measures and precautions are realized by the operator correctly (see also Topic 1, answer to question 1E).

C. *What is the regulatory body's position regarding the inspection that the operators measures to avoid CSFI? Describe the specific guidance for inspectors regarding CSFI.*

From the RB's point of view, the basis to avoid CSFI is a high level QA programme of the operator. This QA programme has to be improved continuously, especially by audits and with respect to OE. This is subject of the regular inspections of the supervisory authority.

The spare parts must be specified precisely with special respect to safety related items. The conformance with these specifications has to be checked carefully by the operator. However, there is no absolute guarantee that no non-conformities occur. Therefore, it is very important that well experienced manufactures and well trained staff are in place.

Up to now, there is no knowledge about wilful deceit of spare parts.

Question 3. Inspection feedback

A *How do the inspectors report results? To whom (especially, if it includes NOEF programme)? Is it required that they report back the results?*

In general, a large amount of the on-site inspections are made by authorized experts on behalf of the supervisory authority. The results of these inspections are documented in inspection certificates or reports and are passed to the supervisory authority.

Findings from all types of inspections, which might be applicable to other plants, are forwarded to other authorities and experts. If the findings are categorized as reportable events according to the Nuclear Safety Officer and Reporting Ordinance, the supervisory authority is required to transmit the event report to the BMU, and in parallel to the Incident Registration Centre of the BfS and the GRS.

B. *Does your RB plan to take any actions with the compilation of all of the inspector's results from non-conformance inspections? If so, please describe.*

There is a regular yearly report on the results from supervision including the inspection that compiles also results from non-conformances inspections. There is no specific regular report on non-conformances inspections.

Hungary

The “non-conformance of spare parts” refers to problems raised from replacement parts not conforming to original design standards. For this topic, we are addressing safety-related spare parts are nuclear quality. Non-conformance may be a result of several issues, such as, the inability to acquisition of original type of spare parts; fabrication might be closed down; changes in type or standards; change in materials; chemicals and supportive materials used in components and equipment; deficiencies in quality or grading bases; ability to trace warehoused parts. The issue “*Non-conformance in spare parts*” came forward to WGOE as a result of the incident at Olkiluoto nuclear power plant, IRS-reported event IRS 8029, “Common-cause failure in main steam line outer isolation valve actuator (2009-05-12)”. A related issue on this topic is the willful deceit of a part to be sold of a standard or type that is it not, called counterfeit, suspect and fraudulent items (CFSI).

This topic is timely and important because:

- Non-conformances of replacement (spare) parts of safety-related equipment or systems and supportive materials (lubricants/greases) used in safety-classified systems may lead to unavailability of safety system/inoperability of safety function and elevated risk of severe accident.
- Non-conformances of replacement (spare) parts of safety-related equipment or systems and supportive materials can result to common cause failure.
- Non-conformances or failures of safety-critical replacement (spare) parts if observed at the storage or at the maintenance workshop are not notified or recorded as those observed at the plants and do not always receive the same kind of safety assessment.
- Clarification of an actual root cause of a failure or malfunction resulted from non-conformances of spare parts or supporting material may not be prioritized leading to misinterpretation of failure and to unfavorable decision making e.g. to continue/start-up of production.
- Conformance of spare parts or supportive materials cannot be observed or verified in the acceptance inspection and utility has to trust on manufacture’s quality certificate.

The regulatory body verifies that the procurement process licensees and their activities related to the replacement of qualified spare-parts are being conducted in an appropriate manner. The objective of this workshop topic is to share and discuss different operating experience and approaches and practices for the regulatory inspection of licensee’s identification and handling of the non-conformance of spare parts.

Question 1. Regulatory Actions by Operating Experience (OE)

A. *Has your regulatory body (RB) taken national generic action on non-conformances of spare parts? Please briefly describe your national approach.*

Not directly, but there is a growing awareness and recording of problems where non-conforming spare parts have influenced on nuclear safety.

B. *Based on OE, what are the main causes identified by your RB (if any) concerning the non conformance of spare parts? Has the licensee(s) identified any different main causes?*

Neither the regulatory body nor the licensee has identified any main causes for non-conformance of spare parts. The licensee couldn’t identify any different main causes.

C. *Has or will your NOEF programme influence or is involved in developing or writing inspection procedures for the inspection of spare parts? Y/N Please describe how.*

Not directly.

D. What are the operator's measures to prevent procurement and the installation of counterfeit, fraudulent and suspect items (CSFI)? Has your RB taken action in light of concerns in other countries?

There was no need to make any actions in light of concerns in other countries. The licensee has got a system for selecting the suppliers. This system has to ensure the avoidance of the installation of counterfeit, fraudulent and suspect items.

Question 2. Inspections

A. Does your RB inspect this issue? Does your inspection programme consider the implementation of a specific inspection for spare parts? How?

Only on a reactive basis should the nuclear Safety significance warrant it. Years before we also had problem with the non conformance of spare parts in case of the sealing ring of the steam generators, the base material was not conform to the Manufacturers' recommendations. After the realization of the non conformance the regulatory body required the licensee to investigate the non conformance. In light of the result of the investigation the licensee decided to make corrective actions. After this event we didn't meet any similar event. Therefore the licensees QA arrangements are expected to be able to deal adequately with the issues surrounding non-conforming parts and these are inspected.

B. What OE type of information on the non-conformance of spare parts is provided (or is available) to inspectors? Who provides the information? What are inspectors expected to do with the information?

IRS reports and the experience of the previous event are available to inspectors. In addition the licensee will have information in relation to non conforming spare parts.

C. What is the regulatory body's position regarding the inspection that the operator's measures to avoid CSFI? Describe the specific guidance for inspectors regarding CSFI.

The regulatory body supervises the process of the supplier's selection. Also the licensing process of the modification, manufacturing and purchase ensure the avoidance of the installation of counterfeit, fraudulent and suspect items.

Question 3. Inspection feedback

A. How do the inspectors report results? To whom (especially, if it includes NOEF programme)? Is it required that they report back the results?

After each visit inspectors are required to draw up a record of the findings. The inspector's own duty is the assessment and the handling of the findings. The licensee's safety directorate also get a copy of the inspection record. If the RB's inspector decided to force an arrangement, the licensee's duty is to make corrective actions, and the inspector's duty is to follow and to assess the fulfilment of the conditions.

B. Does your RB plan to take any actions with the compilation of all of the inspector's results from non-conformance inspections? If so, please describe.

According to the procedures each inspection is considered separately. In each case of non-conformance the result of the inspection is analysed by the NPP Supervision Department. In case of safety significance, repetition or common cause (of the non-conformance), the re-inspection should be integrated in the next annual inspection plan.

India

Question 1. Regulatory Actions by Operating Experience (OE)**A. Has your regulatory body (RB) taken national generic action on non-conformances of spare parts? Please briefly describe your national approach.**

In India, it is the responsibility of the utility to develop spare parts management programme, which includes QA requirements. AERB during its regulatory inspections ensures the conformance to the QA requirements during procurement, storage and testing of spare parts. Based on the experience with management of spare parts by the utility, the issue has not been seen as generic in nature so far.

B. Based on OE, what are the main causes identified by your RB (if any) concerning the non conformance of spare parts? Has the licensee(s) identified any different main causes?

The causes identified for non-conformance of spare parts in a few cases experienced, are mainly due to the following:

- (a) Inadequate specification.
- (b) Non adherence to inspection requirements.
- (c) Non adherence to quality assurance procedures.

C. Has or will your NOEF programme influence or is involved in developing or writing inspection procedures for the inspection of spare parts? Y/N Please describe how.

Answer: The NOEF programme is not involved in development or preparation of inspection procedures. These are part of quality assurance procedures prepared by the utility for procurement of spare parts.

D. What are the operator.s measures to prevent procurement and the installation of counterfeit, fraudulent and suspect items (CSFI)? Has your RB taken action in light of concerns in other countries?

The established procurement process of the utility requires the supplier to adhere to General Conditions of Contract and approved Quality Assurance plans, which prevent introduction of CSF items. In addition, the engineering staff is fully involved in engineering, preparing specifications, specifying quality assurance requirements and purchase/procurement. This also ensures an effective implementation of quality assurance checks at identified stages of manufacture and thus prevents CSFI.

The Quality Assurance (QA) groups at NPCIL headquarters and stations are entrusted with the responsibility of preparing the Quality Assurance Plan (QAP) for each item that is procured. The generic documents prepared for the purpose describe general practices, resources and sequence of activities (such as inspection, testing, control, etc.) to be performed during the manufacture of the equipment.

The actions of the regulatory body are taken on a case to case basis. The inspectors have been sensitized to the CSFI issues and directed to look for adequacy of spare parts management during inspections.

A. Does your RB inspect this issue? Does your inspection programme consider the implementation of a specific inspection for spare parts? How?

Regulatory body is entrusted with verifying existence of appropriate QA programme and adherence to this programme by the utilities while procuring the spare parts. During routine regulatory inspections, this aspect is verified by the inspectors.

B. What OE type of information on the non-conformance of spare parts is provided (or is available) to inspectors? Who provides the information? What are inspectors expected to do with the information?

The information pertaining to inventory control, storage, QA test reports and specifications are made available to the inspectors by the utility. The information is also available in the form of OE reports from the utility and from its own sources in regulatory body. The inspectors are expected to specifically look into the aspects of spare part management and verify adherence to established procedures during regulatory inspections.

If non-conformance of spare parts is observed by the inspectors, specific recommendations are made for appropriate assessment, including QA & testing of the spare parts by the designers.

C. What is the regulatory body's position regarding the inspection that the operator's measures to avoid CSFI? Describe the specific guidance for inspectors regarding CSFI.

Regulatory body is entrusted with verifying existence of appropriate QA programme and adherence to this programme by the utility while procuring the spare parts.

A. How do the inspectors report results? To whom (especially, if it includes NOEF programme)? Is it required that they report back the results?

The observations on spare parts are included in the inspection report submitted to the regulatory body. The report is also made available to the utility. The utility is required to submit response on the observations / recommendations made, to the regulatory body in a time bound manner.

B. Does your RB plan to take any actions with the compilation of all of the inspector's results from non-conformance inspections? If so, please describe.

The instances of non conformance observed so far are not significant. Therefore a need for such compilation has not been felt so far.

Japan

The “non-conformance of spare parts” refers to problems raised from replacement parts not conforming to original design standards. For this topic, we are addressing safety-related spare parts are nuclear quality. Non-conformance may be a result of several issues, such as, the inability to acquisition of original type of spare parts; fabrication might be closed down; changes in type or standards; change in materials; chemicals and supportive materials used in components and equipment; deficiencies in quality or grading bases; ability to trace warehoused parts. The issue “Non-conformance in spare parts” came forward to WGOE as a result of the incident at Olkiluoto nuclear power plant, IRS-reported event IRS 8029, “Common-cause failure in main steam line outer isolation valve actuator (2009-05-12)”. A related issue on this topic is the willful deceit of a part to be sold of a standard or type that is it not, called counterfeit, fraudulent, and suspect items (CFSI).

This topic is timely and important because:

- Non-conformances of replacement (spare) parts of safety-related equipment or systems and supportive materials (lubricants/greases) used in safety-classified systems may lead to unavailability of safety system/inoperability of safety function and elevated risk of severe accident.
- Non-conformances of replacement (spare) parts of safety-related equipment or systems and supportive materials can result to common cause failure.
- Non-conformances or failures of safety-critical replacement (spare) parts if observed at the storage or at the maintenance workshop are not notified or recorded as those observed at the plants and do not always receive the same kind of safety assessment.
- Clarification of an actual root cause of a failure or malfunction resulted from non-conformances of spare parts or supporting material may not be prioritized leading to misinterpretation of failure and to unfavorable decision making e.g. to continue/start-up of production.
- Conformance of spare parts or supportive materials cannot be observed or verified in the acceptance inspection and utility has to trust on manufacture’s quality certificate.

The regulatory body verifies that the procurement process licensees and their activities related to the replacement of qualified spare-parts are being conducted in an appropriate manner. The objective of this workshop topic is to share and discuss different operating experience and approaches and practices for the regulatory inspection of licensee’s identification and handling of the non-conformance of spare parts.

Question 1. Regulatory Actions by Operating Experience (OE)

A. Has your regulatory body (RB) taken national generic action on non-conformances of spare parts? Please briefly describe your national approach.

It is required by the Ministry’s law that the licensee should acquire the necessary technical information to maintain or manage those purchased products or works after the licensee has received them, and take necessary action to share the information with other licensees. This is amended in the licensee’s safety operational program. This requirement is also applicable to the spare parts.

When the noncompliance issue happens, it is requested to the other licensees to assure applicability for the same type of and/or the similar type of spare parts according to the quality management rule specified in their operational safety programs. The example is the falsification of the valve material qualification test data that happened a few years ago.

B. Based on OE, what are the main causes identified by your RB (if any) concerning the non conformance of spare parts? Has the licensee(s) identified any different main causes?

None to note.

C. Has or will your NOEF programme influence or is involved in developing or writing inspection procedures for the inspection of spare parts? Y/N Please describe how.

None to note.

D. What are the operator's measures to prevent procurement and the installation of counterfeit, fraudulent and suspect items (CSFI)? Has your RB taken action in light of concerns in other countries?

We have experience to have not approved to implement MOX fuel since we received information that there had been falsification of manufacturing data. We had information from HSE of England that there had been noncompliance to QA program regarding MOX fuel manufacturing.

As for the procurement of equipment important to safety, it is reviewed in the operational inspection that they follow the QA program required by the METI law and specified in their operational safety programs.

While on the licensee side, JANTI (Japan Nuclear Technology Institute) inform such noncompliance issues to all the utilities and upload on its web-site.

Question 2. Inspections

A. Does your RB inspect this issue? Does your inspection programme consider the implementation of a specific inspection for spare parts? How?

The spare parts of the equipment important to safety such as safety relief valves and CRDs are subject to the pre-service inspection. The licensee is required to make application or report to the regulatory agency. Furthermore, they have to make tests witnessed by the inspector. As for the other spare parts, we can confirm as one of the topics of the operational safety inspection. The licensee is required to follow the QA requirements specified in their safety operational programs.

B. What OE type of information on the non-conformance of spare parts is provided (or is available) to inspectors? Who provides the information? What are inspectors expected to do with the information?

When such noncompliance issue is informed to the NISA head office and/or the local inspection offices, it is shared on the intranet. If the issue is significantly important, necessary instruction will be given to the inspectors to cope with the issue. The inspectors check the spare parts following to the instruction of the NISA head office. One of the examples is cracks on the control rods.

C. What is the regulatory body's position regarding the inspection that the operator's measures to avoid CSFI? Describe the specific guidance for inspectors regarding CSFI.

There is no specific regulation to the CSFI issue. The licensee is required to comply with QA management program. The inspector can check if the licensee follows the QA requirements for the procurement. The inspector oversees if the licensee surely reviews the quality management system of the contractor and if they make audit at the appropriate times.

Question 3. Inspection feedback

A. How do the inspectors report results? To whom (especially, if it includes NOEF programme)? Is it required that they report back the results?

The inspector review, in the operational safety inspection, the licensee's procurement management activities and the results are reported to the Minister as the operational safety inspection report. The inspector monitors the licensee's management status daily and they can select this item as one of the operational safety inspection items repeatedly if necessary. If the significant issue is identified in the daily inspection, it is reported to the director of Inspection Division and to the director general of NISA head office through the general manager of the local inspection office. Reporting is basically one of the requirements.

B. Does your RB plan to take any actions with the compilation of all of the inspector's results from non-conformance inspections? If so, please describe.

The inspector monitors the status of the licensee's activities such as noncompliance management, corrective actions, and preventive measures. If their related actions are appropriate, nothing will be mentioned by the inspector. However, if the noncompliance issue is of safety significance and the regulator consider it necessary to keep on monitoring, the inspector requires to do cause analysis and to make corrective actions, etc.. Further if it is necessary, he requires root cause analysis and to report the conclusions.

Korea

Question 1. Regulatory Actions by Operating Experience (OE)**A. *Has your regulatory body (RB) taken national generic action on non-conformances of spare parts? Please briefly describe your national approach.***

Non-conformances of spare parts can be identified through operation/maintenance/tests, occurrence of the event, the equipment failure, receiving inspection, and the qualification of the certificate authority. The regulatory body has recognized the importance of this inspection to prevent and identify non-conformances of spare parts and CFSI.

B. *Based on OE, what are the main causes identified by your RB (if any) concerning the non conformance of spare parts? Has the licensee(s) identified any different main causes?*

Non-conformances of spare parts can be identified during inspection based on OE and reporting events. And licensees can identify the non-conformances of spare parts from the operation/maintenance/tests, receiving inspections, self-inspections, and etc.

C. *Has or will your NOEF programme influence or is involved in developing or writing inspection procedures for the inspection of spare parts? Y/N Please describe how.*

Yes. The inspection of spare parts are reflected in the inspection procedure/guidance and licensee's QA department operates IT network(Q-NET) managing list of non-conformances of spare parts.

D. *What are the operator's measures to prevent procurement and the installation of counterfeit, fraudulent and suspect items (CSFI)? Has your RB taken action in light of concerns in other countries?*

- 1) Communication with supplier and reinforcement of the inspection of vendor company.
- 2) Comparison of CFSI information with licensee's IT network(Q-NET) during receiving inspection.
- 3) Additional tests and inspections in the case of dangerous situation.
- 4) Performance V&V during maintenance.

Question 2. Inspections**A. *Does your RB inspect this issue? Does your inspection programme consider the implementation of a specific inspection for spare parts? How?***

Yes. The RB conducts the inspection which includes this issue as a priority item in QA inspection plan if necessary.

B. *What OE type of information on the non-conformance of spare parts is provided (or is available) to inspectors? Who provides the information? What are inspectors expected to do with the information?*

The information of items selected from the 'Incident and Failure reports' is collected by inspectors and applied to the sampling of the specific item during inspections.

C. *What is the regulatory body's position regarding the inspection that the operator's measures to avoid CSFI? Describe the specific guidance for inspectors regarding CSFI.*

Use of the original vendor or certified vendor by the original vendor, prohibition of brokers or not certified distributors, and etc.

Question 3. Inspection feedback

A. How do the inspectors report results? To whom (especially, if it includes NOEF programme)? Is it required that they report back the results?

The inspectors apply the information of CSFI in NOEF programme, report the inspection results according to the regulation rule, and notify them to the licensee and vendors.

B. Does your RB plan to take any actions with the compilation of all of the inspector`s results from non-conformance inspections? If so, please describe.

Inspection results are collected and published annually.

Mexico

The “non-conformance of spare parts” refers to problems raised from replacement parts not conforming to original design standards. For this topic, we are addressing safety-related spare parts are nuclear quality. Non-conformance may be a result of several issues, such as, the inability to acquisition of original type of spare parts; fabrication might be closed down; changes in type or standards; change in materials; chemicals and supportive materials used in components and equipment; deficiencies in quality or grading bases; ability to trace warehoused parts. The issue “*Non-conformance in spare parts*” came forward to WGOE as a result of the incident at Olkiluoto nuclear power plant, IRS-reported event IRS 8029, “Common-cause failure in main steam line outer isolation valve actuator (2009-05-12)”. A related issue on this topic is the willful deceit of a part to be sold of a standard or type that is it not, called counterfeit, suspect and fraudulent items (CFSI).

This topic is timely and important because:

- Non-conformances of replacement (spare) parts of safety-related equipment or systems and supportive materials (lubricants/greases) used in safety-classified systems may lead to unavailability of safety system / inoperability of safety function and elevated risk of severe accident
- Non-conformances of replacement (spare) parts of safety-related equipment or systems and supportive materials can result to common cause failure
- Non-conformances or failures of safety-critical replacement (spare) parts if observed at the storage or at the maintenance workshop are not notified or recorded as those observed at the plants and do not always receive the same kind of safety assessment.
- Clarification of an actual root cause of a failure or malfunction resulted from nonconformances of spare parts or supporting material may not be prioritized leading to misinterpretation of failure and to unfavorable decision making e.g. to continue/start-up of production.
- Conformance of spare parts or supportive materials cannot be observed or verified in the acceptance inspection and utility has to trust on manufacture’s quality certificate.

The regulatory body verifies that the procurement process licensees and their activities related to the replacement of qualified spare-parts are being conducted in an appropriate manner. The objective of this workshop topic is to share and discuss different operating experience and approaches and practices for the regulatory inspection of licensee’s identification and handling of the non-conformance of spare parts.

Question 1. Regulatory Actions by Operating Experience (OE)

A. Has your regulatory body (RB) taken national generic action on non-conformances of spare parts? Please briefly describe your national approach.

Since the inception of Laguna Verde Nuclear Power Station (LVNPS) Project, government authorities decided that, in addition to applying the regulations of the IAEA, the regulations of the nuclear steam supply system supplier’s country of origin would be equally applied. This requirement is stated in Condition No. 3 of the Commercial Operation License for both LVNPS Units. For this reason, Title 10 “Energy” of the United States of America (US) Code of Federal Regulations (CFR), and all industry standards and guidelines issued from this title were established as a regulatory requirement. Similarly the Regulatory Guidelines issued by the US Nuclear Regulatory Commission (NRC) have been adopted. So the licensee follows the Appendix B to 10 CFR parts 50 and the ANSI N45.2.13-1976.

B. Based on OE, what are the main causes identified by your RB (if any) concerning the non conformance of spare parts? Has the licensee(s) identified any different main causes?

Neither Our RB nor Licensee until now has found any non conformance of spare parts.

C. *Has or will your NOEF programme influence or is involved in developing or writing inspection procedures for the inspection of spare parts? Y/N Please describe how.*

No, the NOEF doesn't influence or is involved in developing or writing inspections procedures

D. *What are the operator's measures to prevent procurement and the installation of counterfeit, fraudulent and suspect items (CSFI)? Has your RB taken action in light of concerns in other countries?*

The Quality Assurance organizations assess and qualified all suppliers of equipment, components and services important to LVNPS safety. The assessment is performed by the operator direct audit to the seller or supplier Quality Programme implementation or audits carried out under the Nuclear Utilities Procurement Issues Committee (NUPIC) cooperation programme, since CFE is a NUPIC member. The qualifications are generally based on the ANSI/ASME N 45.2.12 "Quality Assurance Programme Requirements for Nuclear Facilities" and ANSI/ASME N 45.2.13 "Quality Assurance Requirements for the Procurement Control of Items and Services for Nuclear Facilities."

Our RB asks the licensee to follow actions related to this issue in other countries (especially in the USA).

Question 2. Inspections

A. *Does your RB inspect this issue? Does your inspection programme consider the implementation of a specific inspection for spare parts? How?*

Yes, in the inspection programme is planed an specific inspection to the dedication process in a biennial base and in annual bases during the maintenance inspection is included a topic related with the verification of spare parts, during this activities the inspectors verify if the spare parts are identical to the original or if they were dedicated by the licensee's engineering department.

It is a common practice to follow-up the OE from other countries (especially from US NRC Generic Communications) to identify potential issues which could affect the safety the LVNPP. Although, the scope does not include the non-safety related components, because there is lack of information on this topic.

B. *What OE type of information on the non-conformance of spare parts is provided (or is available) to inspectors? Who provides the information? What are inspectors expected to do with the information?*

The OE reviews the information from other countries and identifies which is potential applicable to the safety of LVNPP. Then such information is provided to the inspectors.

The information is transmitted to the inspection department by the head of operational experience branch.

The inspectors shall included the information at the check-list and follow that the licensee's included these information in the corrective action programme and follow the implementation during the inspection.

C. *What is the regulatory body's position regarding the inspection that the operator's measures to avoid CSFI? Describe the specific guidance for inspectors regarding CSFI.*

The regulatory body's position is to track the programs followed by Quality Assurance organization of the utility. There is not a specific guidance to follow CSFI.

Question 3. Inspection feedback

A. *How do the inspectors report results? To whom (especially, if it includes NOEF programme)? Is it required that they report back the results?*

The inspectors report the results in a written inspection report to the Nuclear Safety Manager of the regulatory body. Then, he sends a copy to the licensee and to the head of assessment department (this person is the supervisor of the OE branch). Until the moment, it has not been necessary to report back the results.

B. Does your RB plan to take any actions with the compilation of all of the inspector's results from non-conformance inspections? If so, please describe.

No. We do not have any action related with this issue.

The Netherlands

The “non-conformance of spare parts” refers to problems raised from replacement parts not conforming to original design standards. For this topic, we are addressing safety-related spare parts are nuclear quality. Non-conformance may be a result of several issues, such as, the inability to acquisition of original type of spare parts; fabrication might be closed down; changes in type or standards; change in materials; chemicals and supportive materials used in components and equipment; deficiencies in quality or grading bases; ability to trace warehoused parts. The issue “*Non-conformance in spare parts*” came forward to WGOE as a result of the incident at Olkiluoto nuclear power plant, IRS-reported event IRS 8029, “Common-cause failure in main steam line outer isolation valve actuator (2009-05-12)”. A related issue on this topic is the willful deceit of a part to be sold of a standard or type that is it not, called counterfeit, fraudulent, and suspect items (CFSI). This topic is timely and important because:

- Non-conformances of replacement (spare) parts of safety-related equipment or systems and supportive materials (lubricants/greases) used in safety-classified systems may lead to unavailability of safety system/inoperability of safety function and elevated risk of severe accident.
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- Clarification of an actual root cause of a failure or malfunction resulted from nonconformances of spare parts or supporting material may not be prioritized leading to misinterpretation of failure and to unfavorable decision making e.g. to continue/start-up of production.
- Conformance of spare parts or supportive materials cannot be observed or verified in the acceptance inspection and utility has to trust on manufacture's quality certificate.

The regulatory body verifies that the procurement process licensees and their activities related to the replacement of qualified spare-parts are being conducted in an appropriate manner. The objective of this workshop topic is to share and discuss different operating experience and approaches and practices for the regulatory inspection of licensee's identification and handling of the non-conformance of spare parts.

Question 1. Regulatory Actions by Operating Experience (OE)

A. *Has your regulatory body (RB) taken national generic action on non-conformances of spare parts? Please briefly describe your national approach.*

Yes, in specific cases like the German fastener (douwels) problems op 2007. All fastener types and fastening procedures were (re-)checked in the Borssele NPP. Another example is the valves for the emergency core cooling system. In those cases actions were asked from the operator by letter from the inspectorate.

B. *Based on OE, what are the main causes identified by your RB (if any) concerning the non conformance of spare parts? Has the licensee(s) identified any different main causes?*

1. Original manufacturers do not exist anymore.
2. (Sub-) contractors / suppliers of manufacturers changed their fabrication processes or some characteristics (specifications of materials used) without notifying the manufacturer / assembler or licensee, or without verification that the changes done were still in compliance with the requirements.
3. Bad identification of the spare parts to be bought (for instance based on a color code that was modified or following confusion between two very similar reference numbers).

C. *Has or will your NOEF programme influence or is involved in developing or writing inspection procedures for the inspection of spare parts? Y/N Please describe how.*

Not at the moment, although warehouse inspections of Borssele NPP on-site storerooms were carried out in the past following problems with control valve actuators. In the frame of our (at present dormant) ISO 9001 processes (and the related commitment for continuous improvement), we want to develop this topic in our inspections.

D. *What are the operator's measures to prevent procurement and the installation of counterfeit, fraudulent and suspect items (CSFI)? Has your RB taken action in light of concerns in other countries?*

Technical staff is involved in the procurement process. This varies from specification, product testing or receipt inspection at the supplier. Depending on item or project the involvement of technical staff varies. Up till now the Dutch Regulatory Body didn't take actions to prevent procurement and installation of CSFI, with the exception mentioned above of the control valve drivers.

Question 2. Inspections

A. *Does your RB inspect this issue? Does your inspection programme consider the implementation of a specific inspection for spare parts? How?*

No, see answers to previous question.

B. *What OE type of information on the non-conformance of spare parts is provided (or is available) to inspectors? Who provides the information? What are inspectors expected to do with the information?*

Information is given by the licensee on a case-by-case basis (following identification of a problem by the licensee). Inspectors have to write down the received information in their reports. This information is available among others to OEF personnel. Inspectors are also expected to proactively share this information with OEF personnel.

C. *What is the regulatory body's position regarding the inspection that the operator's measures to avoid CSFI? Describe the specific guidance for inspectors regarding CSFI.*

Up till now we have no view on how the licensee faces this potential threat.

No specific guidance has as yet been issued by the RB.

Question 3. Inspection feedback

A. *How do the inspectors report results? To whom (especially, if it includes NOEF programme)? Is it required that they report back the results?*

Inspectors have to write down the received information in their inspection reports. This information is available to all the inspectorate personnel of the Dutch RB and especially to OEF personnel. Inspectors are also expected to proactively share this information with OEF personnel. From each inspection a report is made. The report is distributed within the department by e-mail. If a special inspection (audit) is held where problems are found in the area of CSFI the inspector and a member of the operating experience personnel work closely together.

B. *Does your RB plan to take any actions with the compilation of all of the inspector's results from non-conformance inspections? If so, please describe.*

No, because we see no reason to do so. Therefore no specific action has been taken up till now, except for a first step (general inspection on the way contracted services are handled by several licensees).

The Slovak Republic

The non-conformance of spare parts is a contemporary example of operating experience trend that many countries are dealing with today. Need to look for non-conformances, proprietary companies, nuclear graded items, original vendors not available, safety system – safety related system -

A. Which generic actions have taken on non-conformances of spare parts? Please briefly describe your national approach.

- The all spare parts related to nuclear safety have to fulfill the requirements of original quality plans and each change has to be approved by regulatory body.
- In case of non-conformances the non planned inspection is triggered.

B. What type of information is provided to inspectors? Who provides the information?

- Usually the information about non-conformances is a part of event description. Such information is provided by operator.

C. What are inspectors expected to do with information on non-conforming spare parts?

- The non planed inspection is organized at permit holder and the whole change process at operator is inspected.

D. How do inspectors report results? Is it required?

- The results are reported by protocols or records. Yes it is required.

E. What are the operator's measures to prevent procurement and the installation of counterfeit, fraudulent and suspect items (CSFI)?

- The operator has its technical committee and this committee supervises all changes related to nuclear safety.

F. What is the regulatory body's position regarding the inspection that the operator's measures to avoid CSFI? Describe the specific guidance for inspectors regarding CSFI.

- The regulatory body at that time does not have special procedure for CSFI. It is the consequence that fact, that did not have such a case.

Slovenia

Question 1. Regulatory Actions by Operating Experience (OE)**A. *Has your regulatory body (RB) taken national generic action on non-conformances of spare parts? Please briefly describe your national approach.***

The non-conformances of spare parts are also covered through ageing Management Programme (AMP). According to the regulations the operator of a radiation or nuclear facility shall identify possible mechanisms of ageing of SSCs important for safety and the effects of ageing, including wear and potential degradation, and continuously monitor and assess the condition of SSCs in the scope of their maintenance, testing and inspection. In our case, the NPP Krško followed the American practice, which is defined in 10 CFR 54 License Renewal Rule and recommendations of industry 'NEI-95-10 Industry Guideline for Implementing the Requirements of 10 CFR Part 45'.

B. *Based on OE, what are the main causes identified by your RB (if any) concerning the non conformance of spare parts? Has the licensee(s) identified any different main causes?*

Possible non conformance of spare parts is found out by inspection, program, and analysis. Till now the licensee has not identified any different main causes.

C. *Has or will your NOEF programme influence or is involved in developing or writing inspection procedures for the inspection of spare parts? Y/N Please describe how.*

The SNSA's OEF programme is also used as the reference for developing inspection annual programme for the inspection of spare parts. One inspection regarding Non-Conformance of Spare Parts was already carried out in 2011. At the moment no actions have been taken to develop inspection annual programme for the inspection of spare parts, but inspectors will carry out additional inspections on the bases of this workshop.

D. *What are the operator's measures to prevent procurement and the installation of counterfeit, fraudulent and suspect items (CSFI)? Has your RB taken action in light of concerns in other countries?*

To prevent procurement and the installation of counterfeit, fraudulent and suspect items it is used strict reporting, and inspection, QA programme, etc. The operator uses its QA/QC programme and own inspection/audit to assure the components installed are of adequate quality.

Question 2. Inspections**A. *Does your RB inspect this issue? Does your inspection programme consider the implementation of a specific inspection for spare parts? How?***

Yes, the inspection programme considers the implementation of a specific inspection for spare parts. It is implemented through inspection of the QA programme for procurement.

B. *What OE type of information on the non-conformance of spare parts is provided (or is available) to inspectors? Who provides the information? What are inspectors expected to do with the information?*

It is possible to consider the non-conformance of spare parts on-site, during modification implementation or administrative procedure considered/ analysed by the SNSA Nuclear Safety Sector. According to the answer at Question 2 B a graded approach is taking place, namely four level approaches.

C. What is the regulatory body's position regarding the inspection that the operator's measures to avoid CSFI? Describe the specific guidance for inspectors regarding CSFI.

No specific guidance. Case by case basis approach based on the legislation.

Question 3. Inspection feedback

A. How do the inspectors report results? To whom (especially, if it includes NOEF programme)? Is it required that they report back the results?

See answer to question 2D. In addition, on case by case basis inspector informs by e mail the SNSA OEF administrator.

B. Does your RB plan to take any actions with the compilation of the entire inspector's results from non-conformance inspections? If so, please describe.

According to the legislation each inspection is considered separately. In addition each year two meetings of management of the SNSA and the NPP is taking place and trends of non-conformances are discussed as appropriate. The trend of non-conformance inspection is analysed by the inspection unit using a specific database. The trend is then used for preparation of the annual programme. In addition all experts are obliged to analyse the "safety culture" observed at the installation using a special formulary prepared by the SNSA. The results of such analyses are further analysed by the Nuclear Safety Sector and reported to SNSA staff. This approach started in 2010.

Spain

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- Non-conformances of replacement (spare) parts of safety-related equipment or systems and supportive materials **can result to common cause failure**
- Non-conformances or failures of safety-critical replacement (spare) parts if observed at the **storage or at the maintenance workshop are not notified or recorded** as those observed at the plants and don’t always receive the same kind of safety assessment.
- Clarification of an actual root cause of a failure or malfunction resulted from nonconformances of spare parts or supporting material may not be prioritized leading to misinterpretation of failure and to unfavorable decision making e.g. to continue/start-up of production.
- Conformance of spare parts or supportive materials cannot be observed or verified in the acceptance inspection and utility **has to trust on manufacture’s quality certificate.**

The regulatory body verifies that the procurement process licensees and their activities related to the replacement of qualified spare-parts are being conducted in an appropriate manner. The objective of this workshop topic is to share and discuss different operating experience and approaches and practices for the regulatory inspection of licensee’s identification and handling of the non-conformance of spare parts.

Question 1. Regulatory Actions by Operating Experience (OE)

A. Has your regulatory body (RB) taken national generic action on non-conformances of spare parts? Please briefly describe your national approach.

The CSN has initiated a set of specific inspections performed by QA specialists to review the licensees’ management, control and use of spare parts

B. Based on OE, what are the main causes identified by your RB (if any) concerning the non conformance of spare parts? Has the licensee(s) identified any different main causes?

It could be considered that similar causes have been identified by RB and Licensees

- Difficulties to get spare parts, mainly due to manufacturers closing down.
- Deficiencies in processes of commercial grade dedication.
- Obsolescence.

C. *Has or will your NOEF programme influence or is involved in developing or writing inspection procedures for the inspection of spare parts? Y/N Please describe how.*

As a recommendation of the first self assessment performed by the CSN in 2008, a set of inspections regarding NOEF has been started and carried out by OE experts, which includes questions related to the control process applied by the licensee in case of identifying problems in the procurement of supplies.

D. *What are the operator's measures to prevent procurement and the installation of counterfeit, fraudulent and suspect items (CSFI)? Has your RB taken action in light of concerns in other countries?*

Spanish plants don't consider CSFI as a challenge to the safe operation of Nuclear Plants at present, as all safety-related components follow a traceability process going back to the original manufacturer. However, licensees consider that CSFI can be a potential problem which must be foreseen and avoided.

RB actions are the same as in 1A; some specific questions related to CSFI have been included in the QA spare part inspections.

Question 2. Inspections

A. *Does your RB inspect this issue? Does your inspection programme consider the implementation of a specific inspection for spare parts? How?*

As has been stated in question 1A, the CSN has initiated a set of specific inspections performed by QA specialists to review the licensees' management, control and use of spare parts.

B. *What OE type of information on the non-conformance of spare parts is provided (or is available) to inspectors? Who provides the information? What are inspectors expected to do with the information?*

As in other general items of OE, inspectors can consult IOEF, IRSs, NRC INs and generic letters and, quite recently, inspectors can also review the outputs of the special inspections mentioned above: those performed by QA specialists regarding licensees' control of spare parts and those carried out by OE experts which integrate questions concerning the control process of spare parts.

RB inspections also take into account the OE information transmitted by resident inspectors. As an example, some delays in working orders caused by lack of adequate replacements could be mentioned.

C. *What is the regulatory body's position regarding the inspection that the operator's measures to avoid CSFI? Describe the specific guidance for inspectors regarding CSFI.*

CSFI is not included specifically in policies or procedures, nor does terminology on this item exist. No specific training on CSFI has been implemented yet. However, general QA guidelines are considered. The provided training is addressed to ensure that items comply with the purchase order's requirements. The Quality Assurance Program is focused on assuring the purchase and use of adequate equipment and material, but not specifically on searching for fraud.

A new specific training guide for Licensees and RB inspectors based on the outcomes of the newly implemented inspections as well as on the IOEF received could be considered.

Question 3. Inspection feedback

A. *How do the inspectors report results? To whom (especially, if it includes NOEF programme)? Is it required that they report back the results?*

Inspectors report the inspection outputs through reports and affidavits that, in case of major findings, will be reviewed and categorized by the CSN committee for categorization of findings.

B. Does your RB plan to take any actions with the compilation of all of the inspector's results from non-conformance inspections? If so, please describe.

No decision has been taken yet; however it will be in the near future based on the results of specific inspections and on the exchange of OE information.

Sweden

The “non-conformance of spare parts” refers to problems raised from replacement parts not conforming to original design standards. For this topic, we are addressing safety-related spare parts are nuclear quality. Non-conformance may be a result of several issues, such as, the inability to acquisition of original type of spare parts; fabrication might be closed down; changes in type or standards; change in materials; chemicals and supportive materials used in components and equipment; deficiencies in quality or grading bases; ability to trace warehoused parts. The issue “*Non-conformance in spare parts*” came forward to WGOE as a result of the incident at Olkiluoto nuclear power plant, IRS-reported event IRS 8029, “Common-cause failure in main steam line outer isolation valve actuator (2009-05-12)”. A related issue on this topic is the willful deceit of a part to be sold of a standard or type that is it not, called counterfeit, fraudulent, and suspect items (CSFI).

This topic is timely and important because:

- Non-conformances of replacement (spare) parts of safety-related equipment or systems and supportive materials (lubricants/greases) used in safety-classified systems may lead to unavailability of safety system / inoperability of safety function and elevated risk of severe accident
- Non-conformances of replacement (spare) parts of safety-related equipment or systems and supportive materials can result to common cause failure
- Non-conformances or failures of safety-critical replacement (spare) parts if observed at the storage or at the maintenance workshop are not notified or recorded as those observed at the plants and don’t always receive the same kind of safety assessment.
- Clarification of an actual root cause of a failure or malfunction resulted from nonconformances of spare parts or supporting material may not be prioritized leading to misinterpretation of failure and to unfavorable decision making e.g. to continue/start-up of production.
- Conformance of spare parts or supportive materials cannot be observed or verified in the acceptance inspection and utility has to trust on manufacture’s quality certificate. The regulatory body verifies that the procurement process licensees and their activities related to the replacement of qualified spare-parts are being conducted in an appropriate manner. The objective of this workshop topic is to share and discuss different operating experience and approaches and practices for the regulatory inspection of licensee’s identification and handling of the non-conformance of spare parts.

Question 1. Regulatory Actions by Operating Experience (OE)

- A. *Has your regulatory body (RB) taken national generic action on non-conformances of spare parts? Please briefly describe your national approach.*
- B. *Based on OE, what are the main causes identified by your RB (if any) concerning the non conformance of spare parts? Has the licensee(s) identified any different main causes?*
- C. *Has or will your NOEF programme influence or is involved in developing or writing inspection procedures for the inspection of spare parts? Y/N Please describe how.*
 - No
- D. *What are the operator’s measures to prevent procurement and the installation of counterfeit, fraudulent and suspect items (CSFI)? Has your RB taken action in light of concerns in other countries?*

Question 2. Inspections

- A. *Does your RB inspect this issue? Does your inspection programme consider the implementation of a specific inspection for spare parts? How?*

B. What OE type of information on the non-conformance of spare parts is provided (or is available) to inspectors? Who provides the information? What are inspectors expected to do with the information?

- There is no systematic follow up on spare parts.

C. What is the regulatory body's position regarding the inspection that the operator's measures to avoid CSFI? Describe the specific guidance for inspectors regarding CSFI.

Question 3. Inspection feedback

A. How do the inspectors report results? To whom (especially, if it includes NOEF programme)? Is it required that they report back the results?

B. Does your RB plan to take any actions with the compilation of all of the inspector's results from non-conformance inspections? If so, please describe.

Switzerland

The “non-conformance of spare parts” refers to problems raised from replacement parts not conforming to original design standards. For this topic, we are addressing safety-related spare parts are nuclear quality. Non-conformance may be a result of several issues, such as, the inability to acquisition of original type of spare parts; fabrication might be closed down; changes in type or standards; change in materials; chemicals and supportive materials used in components and equipment; deficiencies in quality or grading bases; ability to trace warehoused parts. The issue “Non-conformance in spare parts” came forward to WGOE as a result of the incident at Olkiluoto nuclear power plant, IRS-reported event IRS 8029, “Common-cause failure in main steam line outer isolation valve actuator (2009-05-12)”. A related issue on this topic is the willful deceit of a part to be sold of a standard or type that is it not, called **counterfeit, suspect and fraudulent items (CSFI – nicht konforme/wissentlich nicht konforme/vorsätzlich nicht konforme Waren)**.

This topic is timely and important because:

- Non-conformances of replacement (spare) parts of safety-related equipment or systems and supportive materials (lubricants/greases) used in safety-classified systems may lead to unavailability of safety system / inoperability of safety function and elevated risk of severe accident
- Non-conformances of replacement (spare) parts of safety-related equipment or systems and supportive materials can result to common cause failure
- Non-conformances or failures of safety-critical replacement (spare) parts if observed at the storage or at the maintenance workshop are not notified or recorded as those observed at the plants and don't always receive the same kind of safety assessment.
- Clarification of an actual root cause of a failure or malfunction resulted from non-conformances of spare parts or supporting material may not be prioritized leading to misinterpretation of failure and to unfavorable decision making e.g. to continue/start-up of production.
- Conformance of spare parts or supportive materials cannot be observed or verified in the acceptance inspection and utility has to trust on manufacture's quality certificate.

The regulatory body verifies that the procurement process licensees and their activities related to the replacement of qualified spare-parts are being conducted in an appropriate manner. The objective of this workshop topic is to share and discuss different operating experience and approaches and practices for the regulatory inspection of licensee's identification and handling of the non-conformance of spare parts.

Question 1. Regulatory Actions by Operating Experience (OE)

A. Has your regulatory body (RB) taken national generic action on non-conformances of spare parts? Please briefly describe your national (Swiss) approach.

OE is looked at as a part of the so called "integrated oversight approach". OE is part of several processes in the Management System (the operation supervision processes emergency preparedness, inspection, event processing, outage, enforcement, safety evaluation, radiation monitoring and the plant assessment processes expert report and permit).

The implementation of Art. 13 in the IAEA convention on nuclear safety requests owners to have QA-programs (Management System, MS). In the framework of this there are processes like procurement. CSFI-items would be treated as non-conforming items. If material was not supplied according to specification or without certificate it was detected and rejected. Possible causes for CSFI are looked at as lack of control in the procurement process (specification, inspection, engineering review, acceptance test ...) to be addressed in the framework of a MS.

All npp's have a MS certified according to ISO 9001, 14001, 18001. Suppliers of products and services are selected on the basis of specified criteria and their performance is permanently evaluated (list of qualified

suppliers, available to all members of a wide owner group). Active prevention of potential negative impacts like CSFI is requested by the continuous improvement process within a MS.

The effectiveness of MS aspects is part of inspections by the Swiss safety authority. Regulations/ordinances and guidelines indicate how to proceed in case of modifications/replacements of safety relevant components to obtain an approval. Confirmed fraudulent activity will be persecuted by law.

Within the framework of a reportable event, the owner has to indicate the cause and the contributing factors in the area of technique, human and organization. CSFI then could be a contributing factor.

The presence of an effective MS is a good practice. Effective control in the procurement process (specification, inspection, engineering review, acceptance test...) is another. Some aspects of the purchasing process are:

- The engineering staff is involved into all relevant steps of the procurement according to the corresponding process descriptions.
- There are stringent terms of delivery – concerning CSFI there is not a specific CSFI training but the general purchasing training includes CSFI aspects.
- There are independent and supplier audits - they are process oriented and CSFI aspects are looked at.
- The request to clearly identify an item.

Outlook: With respect to the long term operation beyond 40 years an effective replacement strategy of the owner within its ageing management program is of growing importance.

B. Based on OE, what are the main causes identified by your RB (if any) concerning the non conformance of spare parts? Has the licensee(s) identified any different main causes?

Based on OE in reports of the Swiss RB and of licensees there are no main causes identified concerning the non conformance of spare parts.

C. Has or will your NOEF programme influence or is involved in developing or writing inspection procedures for the inspection of spare parts? Y/N Please describe how.

Operating Experience is looked at as a part of the integrated oversight approach. There are no specific inspection procedures for the inspection of spare parts.

D. What are the operator's measures to prevent procurement and the installation of counterfeit, fraudulent and suspect items (CSFI)? Has your RB taken action in light of concerns in other countries?

See A of question 1. Concerning the CSFI concerns in other countries we participate in international working groups.

Question 2. Inspections

A. Does your RB inspect this issue? Does your inspection programme consider the implementation of a specific inspection for spare parts? How?

Yes. See A of question 1. A specific inspection for spare parts is a possible outcome of our integrated oversight approach.

B. What OE type of information on the non-conformance of spare parts is provided (or is available) to inspectors? Who provides the information? What are inspectors expected to do with the information?

Reports of licensees and reports of the Swiss RB are available to all inspectors. An example is the result of the screening of IRS reports by the IRS-officer. Inspectors are expected to take notice and if appropriate initiate measures (enforcement).

- C. *What is the regulatory body's position regarding the inspection that the operator's measures to avoid CSFI? Describe the specific guidance for inspectors regarding CSFI.***

See A of question 1.

Question 3. Inspection feedback

- A. *How do the inspectors report results? To whom (especially, if it includes NOEF programme)? Is it required that they report back the results?***

All inspections have to be documented in an inspection report. In this report each inspection finding is assigned to a cell in a matrix (standards or performance/defense in depth or safety functions) and electronically transferred in the safety evaluation viewing system. In the integrated oversight approach this is also done with events, licensee's monthly/annual reports, permits and may trigger a "focused team inspection" and leads to the final evaluation of plant safety in our annual report.

- B. *Does your RB plan to take any actions with the compilation of all of the inspector's results from non-conformance inspections? If so, please describe.***

See A of Question 3. So far the compilation of all of the inspector's findings from non conformance inspections could trigger an enforcement action.

The United Kingdom

The “non-conformance of spare parts” refers to problems raised from replacement parts not conforming to original design standards. Non-conformance may be a result of several issues, such as, the inability to acquisition of original type of spare parts; fabrication might be closed down; changes in type or standards; change in materials; etc.; chemicals and supportive materials used in components and equipments (safety classified products - deficiencies in their quality or grading bases). These safety-related spare parts are nuclear quality - not warehoused. The issue “Non-conformance in spare parts” came forward in Olkiluoto nuclear power plant in connection of IRS-reported event "Common-cause failure in main steam line outer isolation valve actuator (2009-05-12)" (IRS 8029).

This topic is timely and important because:

- Non-conformances of replacement (spare) parts of safety-related equipment or systems and supportive materials (lubricants/greases) used in safety-classified systems may lead to unavailability of safety system/inoperability of safety function and elevated risk of severe accident.
- Non-conformances of replacement (spare) parts of safety-related equipment or systems and supportive materials can result to common cause failure.
- Non-conformances or failures of safety-critical replacement (spare) parts if observed at the storage or at the maintenance workshop are not notified or recorded as those observed at the plants and do not always receive the same kind of safety assessment.
- Clarification of an actual root cause of a failure or malfunction resulted from non-conformances of spare parts or supporting material may not be prioritized leading to misinterpretation of failure and to unfavorable decision making e.g. to continue/start-up of production.
- Conformance of spare parts or supportive materials cannot be observed or verified in the acceptance inspection and utility has to trust on manufacture’s quality certificate.

The regulatory body verifies that the procurement process licensees and their activities related to the replacement of qualified spare-parts are being conducted in an appropriate manner.

The objective of this workshop topic is to share and discuss different operating experience and approaches and practices for the regulatory inspection of licensee’s identification and handling of the non-conformance of spare parts.

Question 1. Regulatory Actions by Operating Experience (OE)

A. Has your RB taken national generic action on non-conformances of spare parts? Please briefly describe your national approach.

There is a growing awareness and improved recording of where non-conforming spare parts have impinged on nuclear safety. NII issued an Advice Note in 2009 to all its operational inspectors to remind them to consider the issue of counterfeit spare parts when inspecting the licensees’ QMS/QA arrangements.

B. Based on OE, what are the main causes identified by your RB (if any) concerning the non conformance of spare parts? Has the licensee(s) identified any different main causes?

We have not identified any main causes for non-conformance of spare parts. Insufficient examples have been brought to our attention to come to any firm conclusions in this area.

C. Has or will your NOEF programme influence or is involved in developing or writing inspection procedures for the inspection of spare parts? Y/N Please describe how.

Not directly, however the work to update the inspection guidance on inspecting the arrangements made under LC17:QA, will incorporate expectations for dealing with non-conforming items.

Question 2. Inspections***A. Does your RB inspect this issue? Does your inspection program consider the implementation of a specific inspection for spare parts? How?***

Only on a reactive basis should the nuclear Safety significance warrant it. The licensees QA/QMS arrangements are expected to be able to deal adequately with the issues surrounding non-conforming parts and these are inspected.

B. What OE type of information on the non-conformance of spare parts is provided (or is available) to inspectors? Who provides the information? What are inspectors expected to do with the information?

Advice Notes are available to inspectors as well as IRS reports and other external information sources. In addition the licensees will have information in relation to non conforming spare parts

Question 3. Inspection feedback***A. How do the inspectors report results? To whom (especially, if it includes NOEF programme)? Is it required that they report back the results?***

After each site visit inspectors are required to report the results of their activities related to OEF (and all other matters inspected) in their site inspection reports. The inspection reports will include the outcome of any follow-up to incidents or events occurring on the site that meet the threshold for further investigation. These reports are sent to their Unit Head who is responsible for inspection of several sites of a similar type eg operating NPPs.

B. Does your RB plan to take any actions with the compilation of all of the inspector's results from non-conformance inspections? If so, please describe.

No – because there is insufficient information or evidence of a significant or generic issue that requires collation and wider dissemination within the regulatory body.

The United States of America

The “non-conformance of spare parts” refers to problems raised from replacement parts not conforming to original design standards. For this topic, we are addressing safety-related spare parts are nuclear quality. Non-conformance may be a result of several issues, such as, the inability to acquisition of original type of spare parts; fabrication might be closed down; changes in type or standards; change in materials; chemicals and supportive materials used in components and equipment; deficiencies in quality or grading bases; ability to trace warehoused parts.

The issue “Non-conformance in spare parts” came forward to WGOE as a result of the incident at Olkiluoto nuclear power plant, IRS-reported event IRS 8029, “Common-cause failure in main steam line outer isolation valve actuator (2009-05-12)”.

A related issue on this topic is the willful deceit of a part to be sold of a standard or type that is it not, called counterfeit, suspect and fraudulent items (CSFI).

This topic is timely and important because:

- Non-conformances of replacement (spare) parts of safety-related equipment or systems and supportive materials (lubricants/greases) used in safety-classified systems may lead to unavailability of safety system/inoperability of safety function and elevated risk of severe accident.
- Non-conformances of replacement (spare) parts of safety-related equipment or systems and supportive materials can result to common cause failure.
- Non-conformances or failures of safety-critical replacement (spare) parts if observed at the storage or at the maintenance workshop are not notified or recorded as those observed at the plants and don’t always receive the same kind of safety assessment.
- Clarification of an actual root cause of a failure or malfunction resulted from nonconformances of spare parts or supporting material may not be prioritized leading to misinterpretation of failure and to unfavorable decision making e.g. to continue/start-up of production.
- Conformance of spare parts or supportive materials cannot be observed or verified in the acceptance inspection and utility has to trust on manufacture’s quality certificate.

The regulatory body verifies that the procurement process licensees and their activities related to the replacement of qualified spare-parts are being conducted in an appropriate manner. The objective of this workshop topic is to share and discuss different operating experience and approaches and practices for the regulatory inspection of licensee’s identification and handling of the non-conformance of spare parts.

Question 1. Regulatory Actions by Operating Experience (OE)

A. Has your RB taken national generic action on non-conformances of spare parts? Please briefly describe your national approach.

Yes. The Quality & Vendor Branch (EQVB) communicates with the industry through the NRC’s generic communication program. EQVB may communicate in the form of bulletins, information notices, generic letters, or regulatory information summaries for issues involving non-conformance of spare parts.

B. Based on OE, what are the main causes identified by your RB (if any) concerning the non conformance of spare parts? Has the licensee(s) identified any different main causes?

EQVB reviews operating experience and focuses on safety-related systems, structures, and components (SSCs). The EQVB focus is on the adequate implementation of the 10CFR Part 21 regulation, which addresses reporting of defects and noncompliance.

C. *Has or will your NOEF programme influence or is involved in developing or writing inspection procedures for the inspection of spare parts? Y/N Please describe how.*

No. EQVB focus is on vendor performance. EQVB ensures that vendors of safety-related SSCs have in place adequate quality assurance (QA) programs and reporting programs to identify, resolve, and report safety-related non-conforming SSCs.

Question 2. Inspections

A. *Does your RB inspect this issue? Does your inspection programme consider the implementation of a specific inspection for spare parts? How?*

No. EQVB has no specific strategy or goal for inspection of non-conforming spare parts.

B. *What OE type of information on the non-conformance of spare parts is provided (or is available) to inspectors? Who provides the information? What are inspectors expected to do with the information?*

The NRC's operating experience program is available to inspectors. EQVB reviews operating experience related to 10CFR Part 21 issues and provide follow-up as necessary. Examples of follow-up activities include issue for resolutions (IFRs), which are developed to track items requiring further staff review. For EQVB, this review often necessitates a telecom with the vendor and affected licensee for more information or a vendor inspection.

Question 3. Inspection feedback

A. *How do the inspectors report results? To whom (especially, if it includes NOEF programme)? Is it required that they report back the results?*

EQVB inspectors issue vendor inspection reports. It is required that inspectors issue vendor inspection reports and make them publicly available.

B. *Does your RB plan to take any actions with the compilation of all of the inspector's results from non-conformance inspections? If so, please describe.*

EQVB has issued generic communications on inspection results that indicate a negative trend in performance or have the potential to affect other licensees or vendors.



Sample Operating Experience Screening Meeting Summary

Issues for Resolution (IFR): One (1)

1) *IFR Review on: SEISMIC CONCERNS WITH SLC TANKS AND RWST PIPING ISSUES*

Review recent issues with seismic concerns related to standby liquid control (SLC) tank issues and RWST piping issues. See earlier OpE COMM on: STANDBY LIQUID CONTROL (SLC) TEST TANK SEISMIC ANALYSIS CONCERNS FOR BWRs (issues from La Salle and River Bend). The RWST piping issue is from a recent Harris finding (see Inspection Report 2010-05, section 1R18 starting on page 23 of the report available in ADAMS at: **ML110280469**). This resulted in a Green NCV of TS 3.1.2.6, Borated Water Sources, for the failure to comply with the limiting conditions for operation, while the Refueling Water Storage Tank (RWST) was aligned to the non-seismic Fuel Pool Purification system (FPPS) for purification, causing the RWST to be inoperable. Specifically, when FPPS was aligned to the RWST, the licensee did not declare the RWST inoperable. These issues appear to have generic applicability.

Issues were screened in under LIC-401 Criteria: 2. A qualitative judgment of significance based on:

- a potential adverse trend – potential existence of a pattern of similar or recurring events/conditions being observed.
- a potential new or novel failure mode, system interaction, material condition or degradation, or other phenomena that may have instructive value for the NRC or the industry.

IFR and IFR Screen-In Document assigned to Mark King

OpE Forum Postings (COMMS): Three (3)

1) *POST OpE COMM ON RECENT OPERATING EXPERIENCE ON INEFFECTIVE USE OF VENDOR TECHNICAL RECOMMENDATIONS*

The Operating Experience Branch recently conducted a review of inspection findings that result from ineffective use of vendor technical recommendations by licensed U.S. commercial nuclear power plants. The intent of this review was to identify performance deficiencies that were attributed, in whole or in part, to licensees' failure to appropriately evaluate or implement vendor recommendations. The study focused on those issues that led to unplanned reactor trips, transients, and/or significant equipment failures.

Post an OpE COMM to the following groups: All Communications, Electrical Power Systems, Emergency Diesel Generators, Human Performance, Inspection Programs, Instrumentation and Controls, Materials/Aging, QA/Vendor, Safety Culture, SIT/AIT. Assigned to John Thompson.

2) *POST OpE COMM ON RECENT SEISMIC CONCERNS RELATED TO RWST PIPING AND STANDBY LIQUID CONTROL TANK ISSUES*

Post OpE COMM on IFR issue above to the following COMM Groups: Comm Group: ALL COMMS, ECCS, FLOODING/MISSILES, HUMAN PERFORMANCE, INSPECTION PROGRAMS, NATURAL PHENOMENA, NRO, SAFETY CULTURE, SHUTDOWN RISK, SPENT FUEL HANDLING, STRUCTURAL and WELDING/NDT. COMM assigned to Mark King

3) *POST OpE COMM ON MILLSTONE 2 – POWER EXCURSION DURING TURBINE CONTROL VALVE TESTING ISSUES*

Post an OpE COMM on the Millstone Power Excursion (See follow up entry below) to the following COMM groups: ALL COMMS, Human Performance, Inspection Programs, Safety Culture and SIT/AIT. COMM posting is assigned to Bob Bernardo.

Management Requests: None

Follow-up/Other Tasks: Six (6)

Note: The information in this part of the Summary is often preliminary in nature and is provided to help IOEB staff communicate and track noteworthy items being followed up by either the Regions or HQ staff.]

1) *EN 46348 - PART 21 - CRACK INDICATIONS IN MARATHON CONTROL ROD BLADES - UPDATE*

*** UPDATE - 2/16/2011 *** See GE Updated. [Part 21 Reportable Condition Notification](#): Design Life of D and S Lattice Marathon Control Blades "GE Hitachi Nuclear Energy (GEH) has completed its evaluation of the cracking of Marathon Control Rod Blades (CRB) at an international BWR/6. This issue was initially reported on October 20, 2010 as GEH letter MFN 10-327 (Reference 1). Additional information was provided on December 1, 2010 as GEH letter MFN 10-351 (Reference 2). GEH has determined that the design life, of D and S lattice Marathon Control Blades may be less than previously stated. The design life if not revised, could result in significant control blade cracking and could, if not corrected, create a substantial safety hazard and is considered a reportable condition under 10 CFR Part 21.21 (d). Marathon C lattice Control Blades are not affected by this condition. The information contained in this document informs the NRC of the conclusions and recommendations derived from GEH's investigation of this issue. Notified by

the HOO per EN update: R1DO (Ferdas), R2DO (McCoy), R3DO (Kozak), R4DO (Gaddy) and the Part 21 Group.

Forward to Fuels TRG lead (Paul Clifford), Power Uprates (Thomas Alexion), Quality Assurance and Vendor Issues (Paul Prescott), Control Rod Issues POC (Anthony Mendiola) and Regional OpE POCs: assigned to Russ Haskell.

2) *DIABLO CANYON 1 – CONTROL ROOM VENTILATION FAILURE (LCO) - UPDATE*

*** 2/16/2011 *** UPDATE – Licensee exited 7 day shutdown (LCO) following the restoration of failed Control Room ventilation damper (2A). Licensee resolved damper position indication issue. Forward update to TRG Lead for HVAC/Control Room Habitability (Nageswara Karipineni); assigned to Russ Haskell.

3) *LASALLE 2 – POTENTIAL UPTAKE OF DOSE TO SEVERAL CONTRACT WORKERS*

*** 2/16/2011 *** UPDATE: Licensee concluded that a total of 12 contract workers were in the vicinity of the refueling floor during the potential uptake of contamination. Upon further evaluation of the 12 workers, only 4 were confirmed to have very low levels of contamination (external). Only 1 worker was confirmed to have significant uptake (> 1 mrem) of (internal) contamination. Dose assessments of this individual are ongoing. Residents continue to track licensee's response to event. Continue to follow.

Forward update to Health Physics TRG (Steven Garry) and HP P.O.C. (Richard Conatser), Dose Assessment (Mark Blumberg), and Human Performance (Mike Boggi); assigned to Russ Haskell

4) *MILLSTONE 2 (COMBUSTION ENGINEERING PWR PLANT) – POWER EXCURSION DURING TURBINE CONTROL VALVE TESTING – (Special Inspection Follow-up is likely)*

During periodic turbine control valve testing on 2/12/2011, a power excursion from 88% to 96% occurred due to operator errors. The Balance of Plant RO incorrectly went to increase instead of decrease on the load selector button. When he did not get the desired response, he pressed the increase button a couple more times. The shift technical advisor (STA), who was the peer check, and the control room supervisor, who was directing the evolution, did not correct the BOP RO. The increased steam demand lowered Tcold and caused a power excursion to 96% power over 90 seconds. While the transient was occurring, the Variable Over Power Trip (VOPT) reset lights were illuminated. The crew reset the VOPT several times to avoid a reactor trip. (The VOPT is a reactor trip which will trip the reactor in the event of a reactivity excursion too rapid to result in a high pressure trip. The licensee stated that this action was not in accordance with operator expectations and also stated that the plant would have tripped had the VOPT not been reset.) The shift manager recognized that a transient was occurring and ordered the BOP RO to stop increasing turbine load. He ordered the reactivity SRO (who was in an oversight role) to withdraw control rods 4 steps to stabilize reactor temperature, while temperature was decreasing, compounding the power increase.

The licensee has taken the following actions:

1. The licensee has classified the transient as a Significance Level 3 (out of 5) Incident due to an unplanned reactivity change of 8% caused by human performance errors.
2. The operating crew had their qualifications suspended, and re-training is ongoing.
3. There will be additional management oversight in the control room 24/7, until further notice.
4. A root cause of the incident will be performed.

Region-I is evaluating the event per Inspection Manual Chapter 0309 to determine if a reactive inspection is warranted, it appears that an SIT will be directed. Region-I has also sent a DRS inspector to the site to begin a review under the baseline inspection program – (IP-71153, Event follow up) pending any reactive inspection decision.

Pass to the TRG Lead for Human Performance (Michael Boggi), Safety Culture (Eric Fries), Operator Licensing Branch (IOLB) Branch Chief (Jack McHale) and the Power Excursion Point of Contact (Jim Isom). Assigned to Bob Bernardo.

5) SEQUOYAH – BOTH MAIN CONTROL ROOM (MCR) CHILLERS OUT OF SERVICE

At 1005 on 2/15, the 'A' MCR chiller was successfully placed in service and declared operable. Both units exited LCO 3.0.3, but remained in LCO 3.0.5.

At 1030 on 2/15, the 1A EDG was declared operable based on the problems being associated with manual control circuits which are not in service during emergency mode operation of the EDG, and thus do not affect the EDG design safety function. Troubleshooting in progress. A formal Functional Evaluation is being generated, and the residents will review. Both units exited LCO 3.0.5. Both units remained in LCO 3.7.15 action A (30 day LCO) for the 'B' train CRACS inoperable. A NOED was not needed nor requested.

The 'B' train of CRACS was restored to operable at 1800 2/15 based on the installation of a jumper to remove the faulty temperature controller. Both units exited the 30-day LCO. The chiller will perform its required function via a redundant control system that will maintain the ability to cycle the chiller on/off based on suction pressure. This is a temporary configuration, and the licensee will be calibrating/replacing the temperature controller and restoring the normal system configuration. Pass to the TRG Lead for HVAC and Dose Assessment (Control Room Habitability – Nageswara Karipineni). Assigned to Bob Bernardo

6) WOLF CREEK – DAMAGED COMPONENT COOLING WATER (CCW) ACTUATOR (LCO)

Licensee entered into unplanned 72-hour shutdown action following the discovery of a nicked wire located in a train 'B' CCW motor operated valve (MOV) housing. Licensee anticipates repairs to be completed today (2/16). Forward to TRG Lead for Station Service Water/UHX (Gerald Purciarello), Pump & Valve (Michael Farnan); assigned to Russ Haskell

New Reactors Items: None

Research (RES) Items: None

Items Screened Out*: Two (2) – two (2) Event Notifications (ENs)

- 1) EN 46348 – PART 21 – CRACK INDICATIONS IN MARATHON CONTROL ROD BLADES – UPDATE
- 2) EN 46616 – SAN ONOFRE – OFF-SITE NOTIFICATION OF SEWAGE SPILL CONTAINED ON-SITE

* *i.e., Screened /reviewed against LIC-401 criteria for initiating an "Issue for Resolution" (IFR), which is IOEB's process for conducting further evaluation of an issue to determine what, if any, additional actions should be taken to communicate and organizationally learn from OpE.*

Attendees at Screening Meeting:

Bob Bernardo – by phone
Mark King – by phone
Russ Haskell
John Thompson
Mary Wegner (RES) – by phone
Derek Scully (NRO) – by phone