



Welcome to Taishan NP site

Content

Project
Introduction



Project
Progress

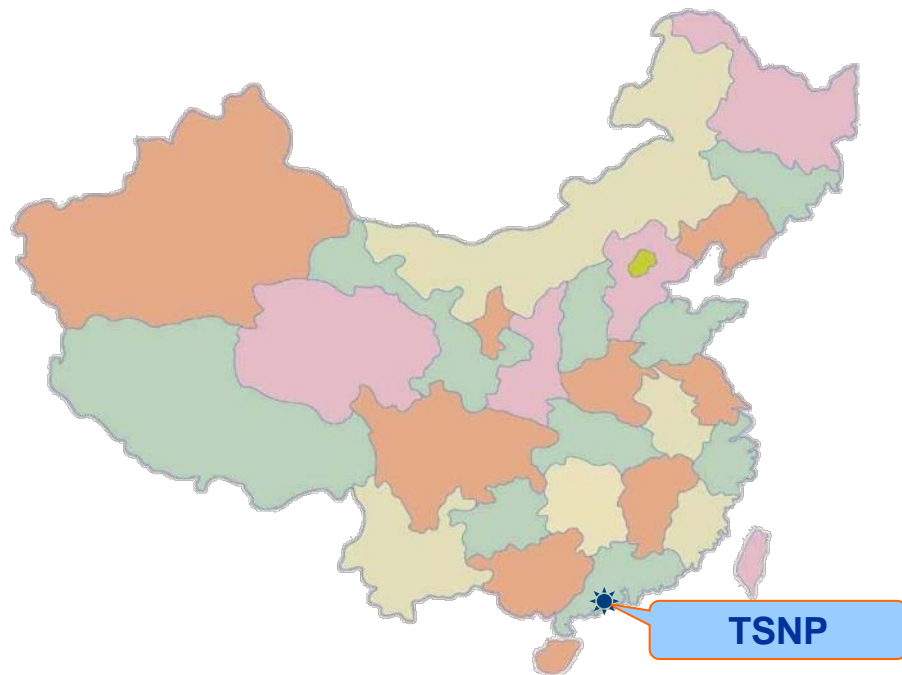


Main Tasks
in 2011



Site Conditions

- TSNP is situated at Yaogu village of Chixi town in Taishan city, Guangdong province, 70km, 80km and 40km respectively away from Zhuhai, Yangjiang and Taishan.



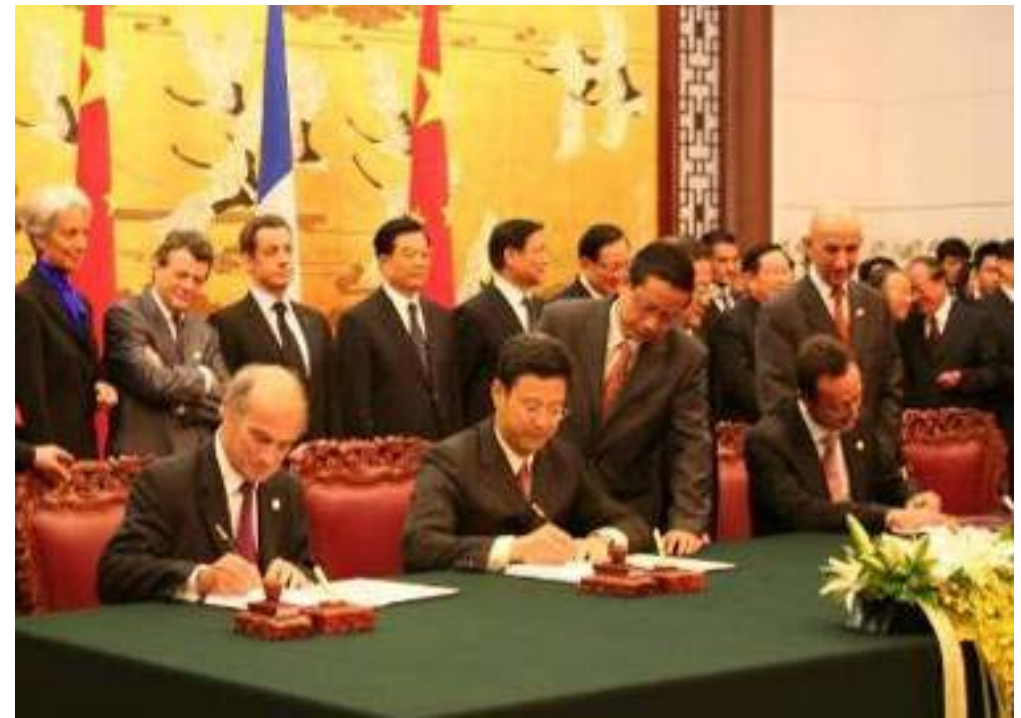
Site Conditions

- Construction of unit 1 commenced on Oct 26th 2009, and the unit is expected to be put into commercial operation in Dec., 2013. The unit 2 schedule is 10 months gap with unit 1.



Project Introduction

- On Nov. 26th, 2007, and under the witness of presidents of both China and France, CGNPC signed, at the Great Hall of the People with EDF and AREVA, cooperation agreements over constructing the Taishan EPR project.



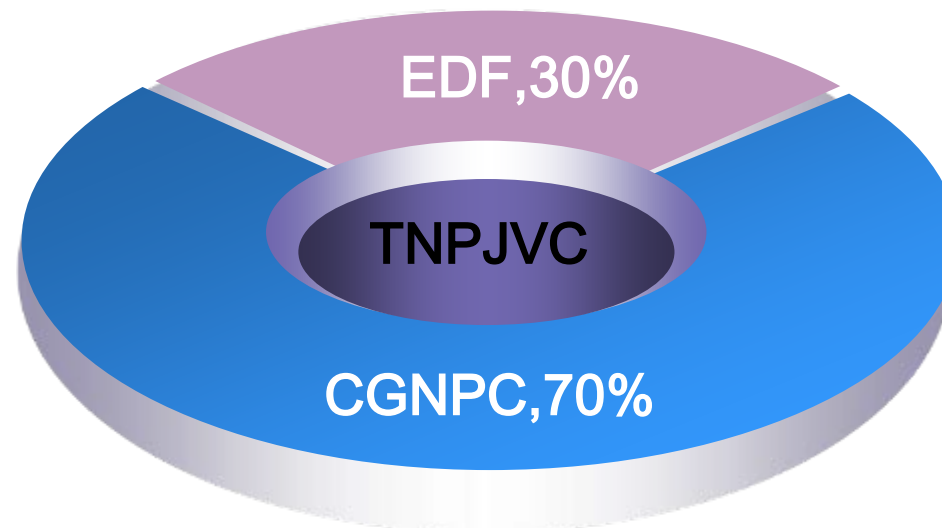
Project Introduction

- In Dec. 21st, 2009, Vice Premier Li Keqiang and French Prime Minister Francois Fillon inaugurated the Taishan Nuclear Power Joint Venture Co., Ltd.



Company Introduction

- Taishan Nuclear Power Joint Venture Co. Ltd. (TNPJVC) is invested and established by CGNPC and EDF. TNPJVC is mainly responsible for the financing, construction, operation and management of Taishan Nuclear Power Station Phase I project, and the ultimate responsibility of nuclear Safety.
- Taishan Nuclear Power Joint Venture Co., Ltd. is invested by CGNPC and EDF, and proportion is 70% and 30% respectively.



Cooperation in Construction


Taishan Project follows a mode of Sino-foreign cooperation in construction with engineering of nuclear power plant and manufacturing of equipment under co-responsibilities of Sino-French enterprises.

- Consortium of AREVA, CNPEC and CNPDC leaded by AREVA is responsible for supply and engineering contracts of NI.
- Consortium of ALSTOM and DEC is responsible for engineering and procurement contracts of TG.
- Other parts of construction are under the responsibilities of domestic enterprises.

Task Sharing

| Equipment | Unit 1 | Unit 2 |
|-------------------|-----------------------------------|------------------------|
| RPV | Mitsubishi Heavy Industries (MHI) | DEC |
| SG | Chalon (France) | DEC / SEC |
| Pressurizer | Chalon (France) | DEC |
| Reactor internals | SKODA (Czechoslovakia) | SEC |
| CRDM | Jeumont (France) | Jeumont (France) / SEC |
| Primary pump | Jeumont (France) / DEC | Jeumont (France) / DEC |
| Heavy supports | DEC | DEC |

Note: NI Primary Equipment localization ratio reaches 50%.

 In the charge of overseas company;

 Sino-foreign joint cooperation;

 In the charge of domestic company.



Task Sharing

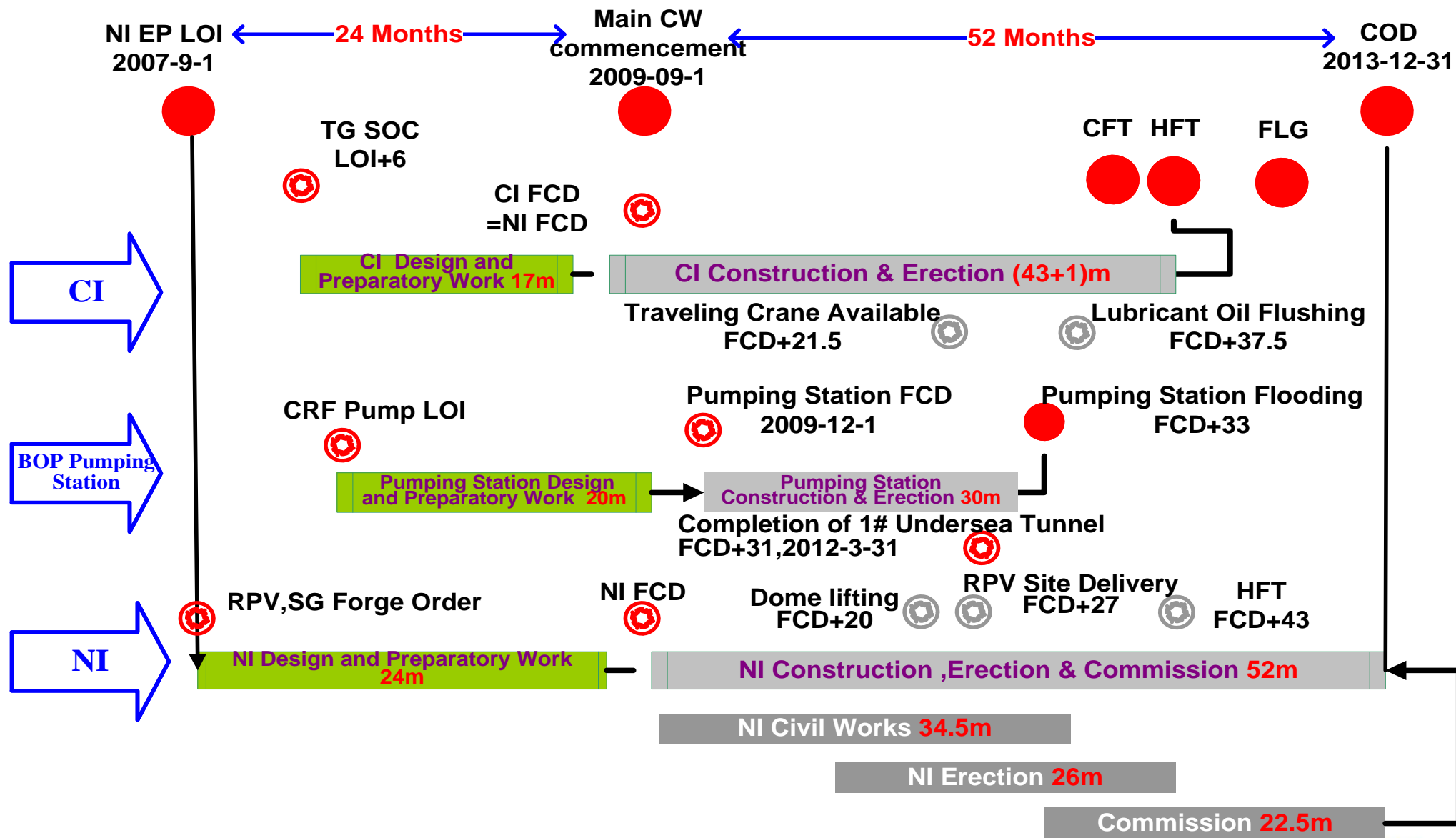
| Equipment | Unit 1 | Unit 2 |
|------------------|--------------------------------|--------|
| HP/MP cylinder | ALSTOM/DEC | DEC |
| 1# LP cylinder | ALSTOM/DEC | DEC |
| 2# LP cylinder | DEC (rotor welding excluded) | DEC |
| 3# LP cylinder | DEC (rotor welding excluded) | DEC |
| Generator rotor | DEC (coil excluded) | DEC |
| Generator stator | DEC (wedge slot excluded) | DEC |
| Exciter | DEC | DEC |

Note: for the Turbine generator units engineering and procurement, the share of Chinese companies accounts for 2/3.

Sino-foreign joint cooperation;
 In the charge of domestic company.



Overall Arrangement



Content

Project
Introductio



Project
Progress



Main Tasks
in 2011



Completion status of Level 1 Milestones

| SN | Millstones | Unit 1# | | Unit 2 # | |
|----|---|--------------|----------------|--------------|----------------|
| | | Planned Date | Completed Date | Planned Date | Completed Date |
| 1 | Signature of NI EP contract | 2007-11-26 | 2007-11-26 | - | - |
| 2 | Signature of TGP contract | 2008-02-28 | 2008-02-28 | - | - |
| 3 | NI FCD | 2009-09-01 | 2009-10-26 | 2010-07-01 | 2010-04-15 |
| 4 | CI FCD | 2009-09-01 | 2009-09-01 | 2010-07-01 | 2010-03-13 |
| 5 | HPX FCD | 2009-12-01 | 2009-11-26 | - | - |
| 6 | TG pedestal start construction | 2010-02-01 | 2010-01-15 | 2010-12-01 | 2010-09-01 |
| 7 | NI erection start (HL* pipeline) | 2010-11-01 | 2010-11-01 | 2011-09-01 | |
| 8 | Demineralized water production system (SDA) commissioning start | 2011-06-15 | 2011-06-15 | - | - |

Project Design

- 1# turbine hall CW drawings issuance basically completed.

Image progress of 1#HM design

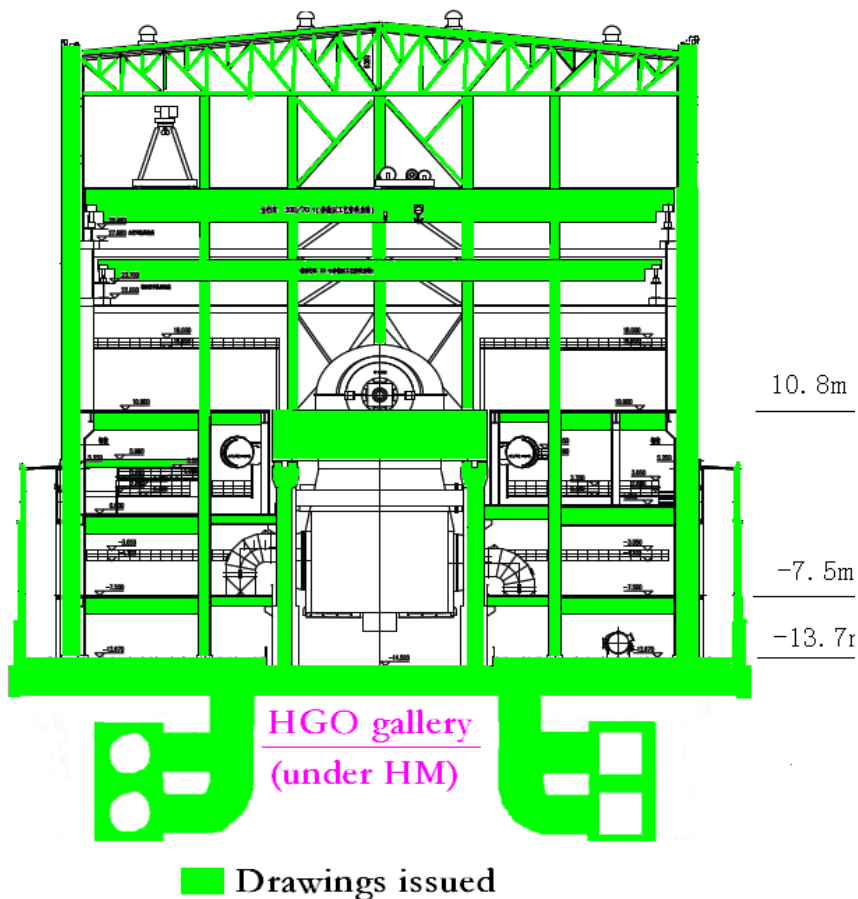
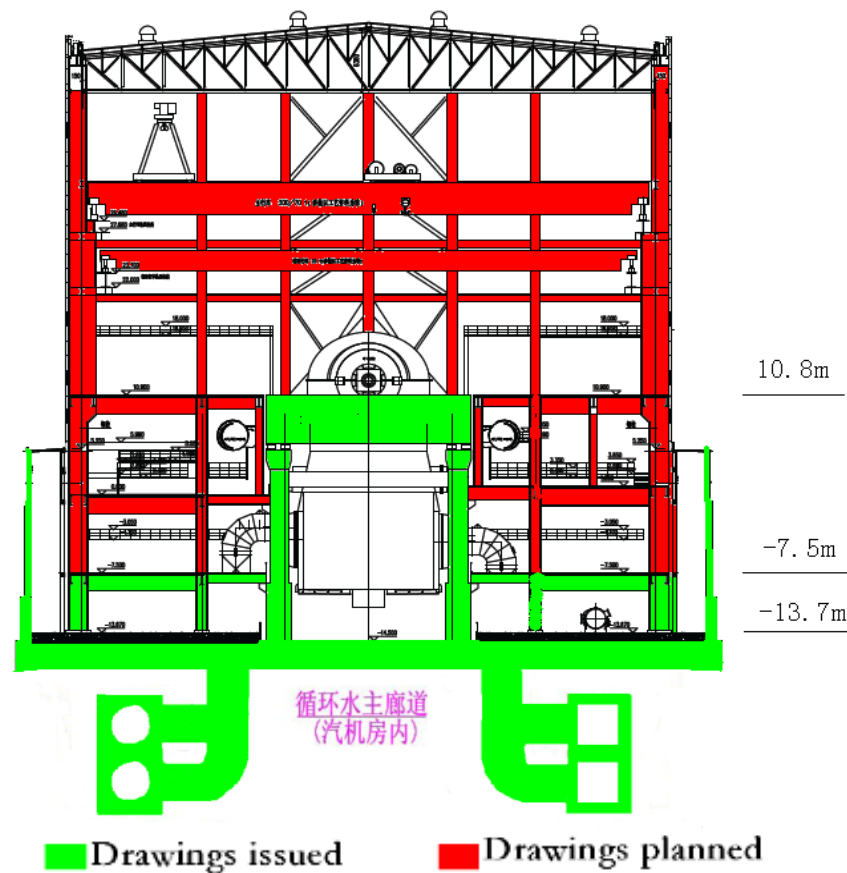


Image progress of 2#HM design



Equipment Manufacture

- Main equipments for unit #1 and #2 are under process of manufacture. Quality and progress are controllable.
- CI and BOP auxiliary equipment manufacture is basically in normal progress.



Unit #1 Reactor Pressurize Vessel- Mitsubishi Japan



Unit #1 Steam Generator –Chalon France

A Bird-eye View of the Site

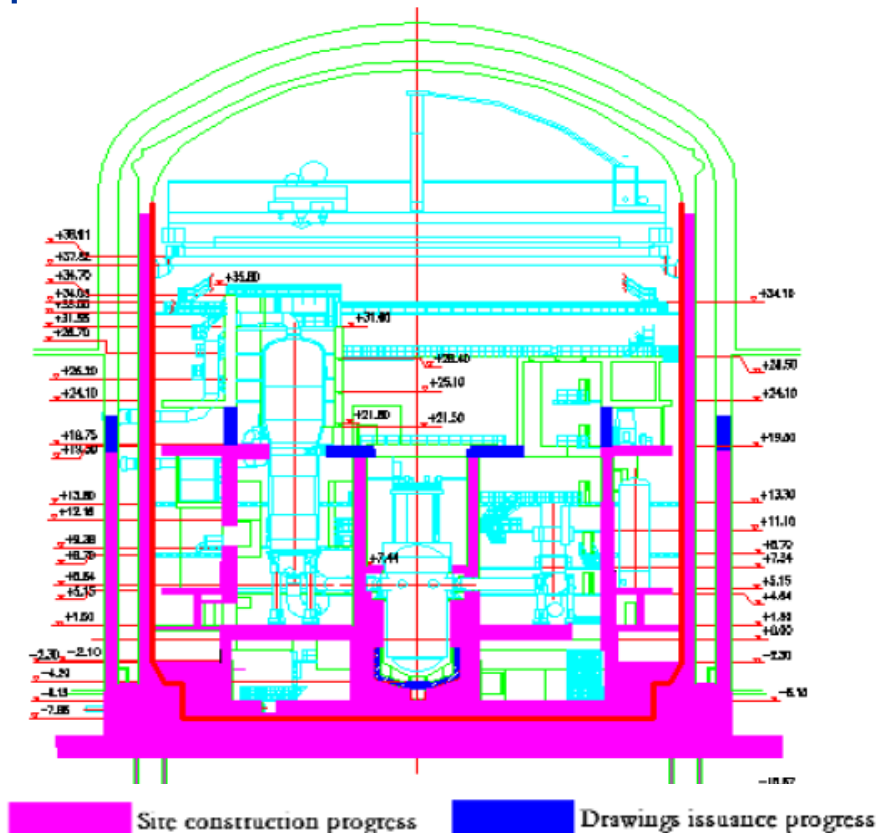


A Bird-eye View of Unit 1



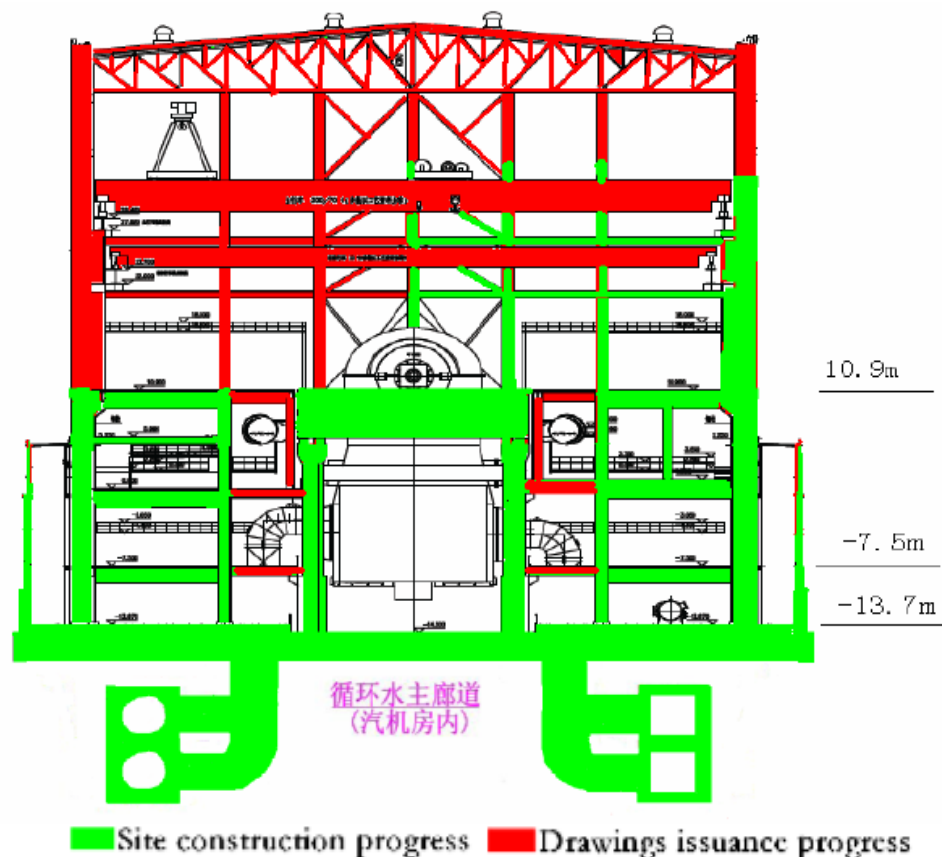
Site Construction

Unit 1 HRA CW: **Steel liner and inner containment in HR Building have satisfied requirement of dome lifting (+42.9m).** Construction on the 7th layer of out containment has completed. 55% of concrete was poured for +19.50m platform. NI surrounding buildings are under construction according to updated schedule.



Site Construction

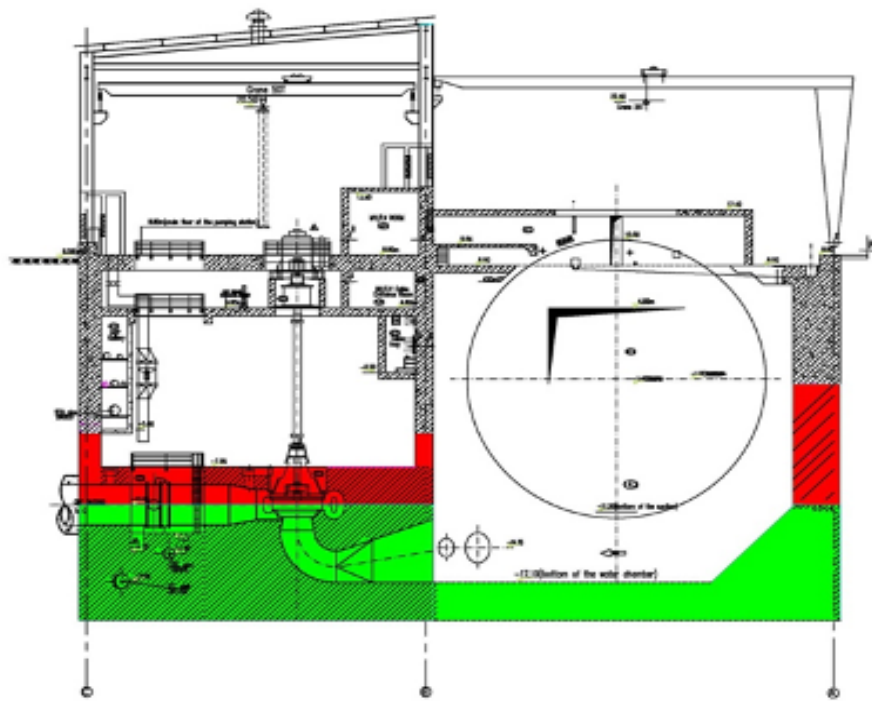
- Unit 1 CI CW: HM raft has been completed. Retaining wall and steel structure are under construction; central support of TG pedestal has been completed. Construction starts for the operating platform.



Site Construction

- Unit 1 HPX CW: Construction has been completed for the volute in pump house, -13.75m to -10.5m raft is under construction; the drum screen raft and up to -10.5m wall are completed.

Image progress of 1#HPX



- Site construction progress
- Drawings issuance progress

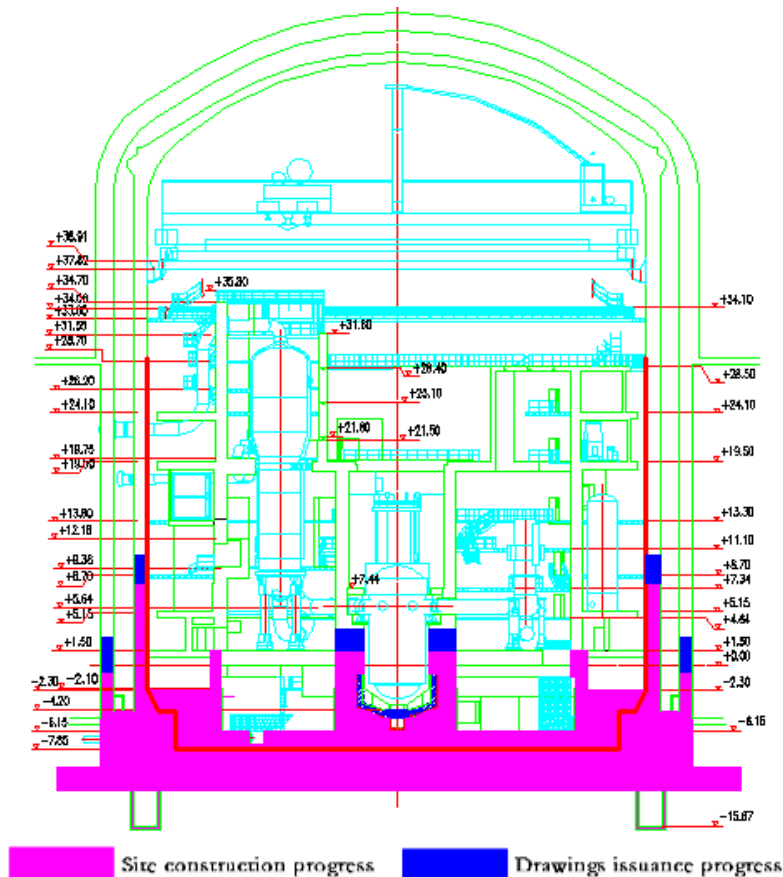


A Bird-eye View of Unit 2



Site Construction

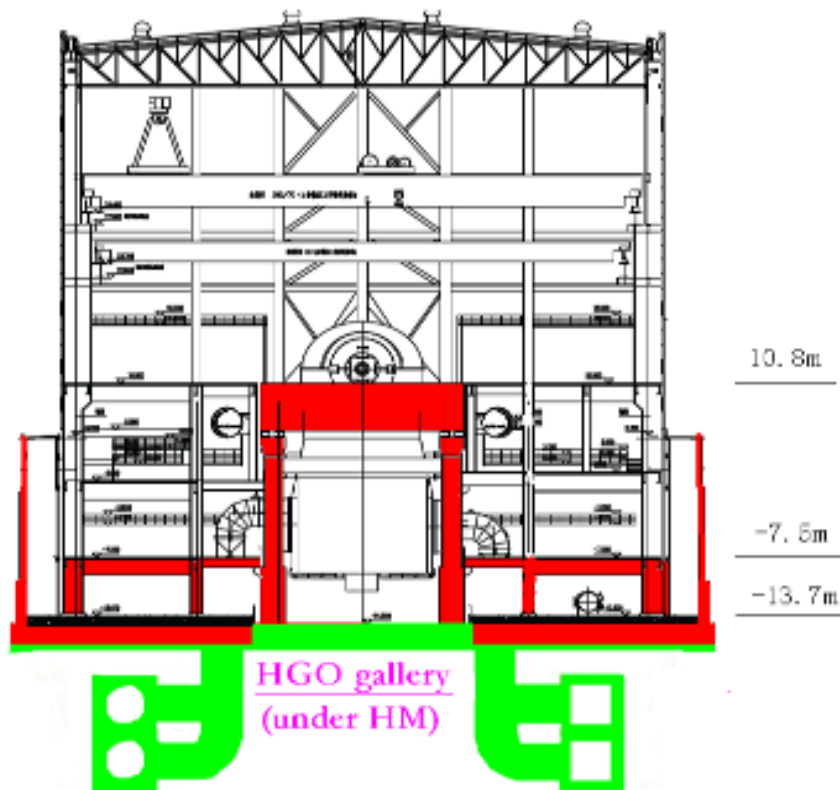
- Unit 2 HRA CW: The 6th layer of steel liner cylinder is lifted, the 2nd layer of outer containment and 4th layer of inner containment are completed; 80% of -2.30m ~ +1.50m spreading area in internal structure is completed; rebar binding is being carried out in -2.30m non-spreading area.



Site Construction

- Unit 2 CI CW: Pressurizing test and backfilling are completed for HGO gallery in HM. **HM raft and TG pedestal are under construction.**

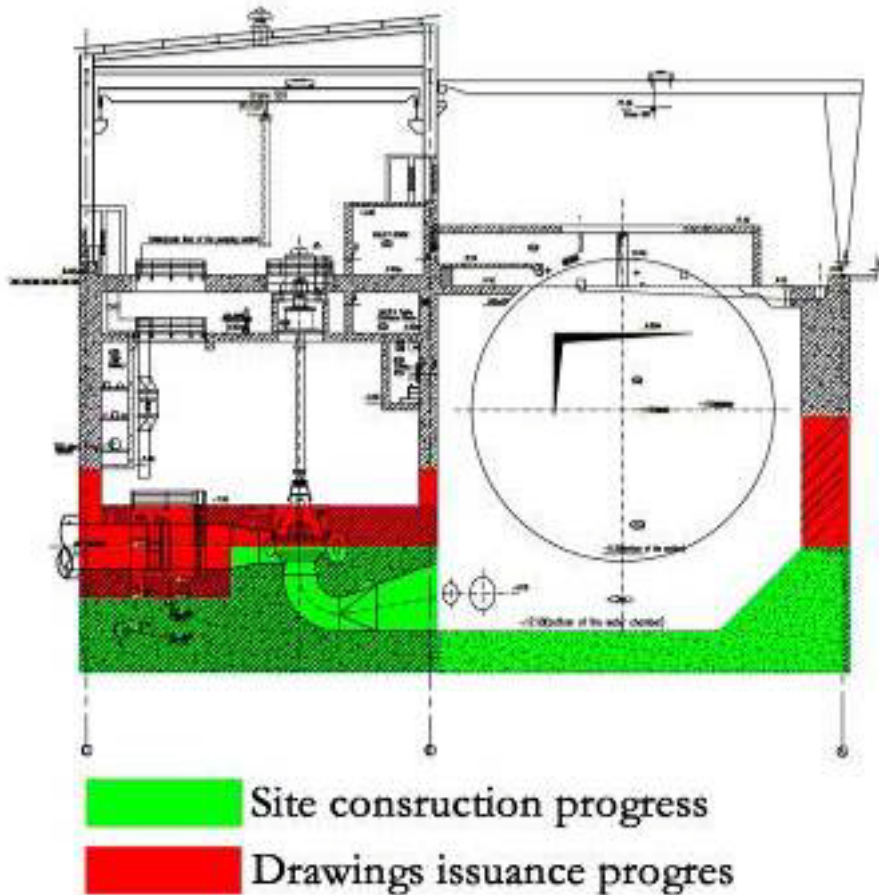
Image progress of 2#HM



Site Construction

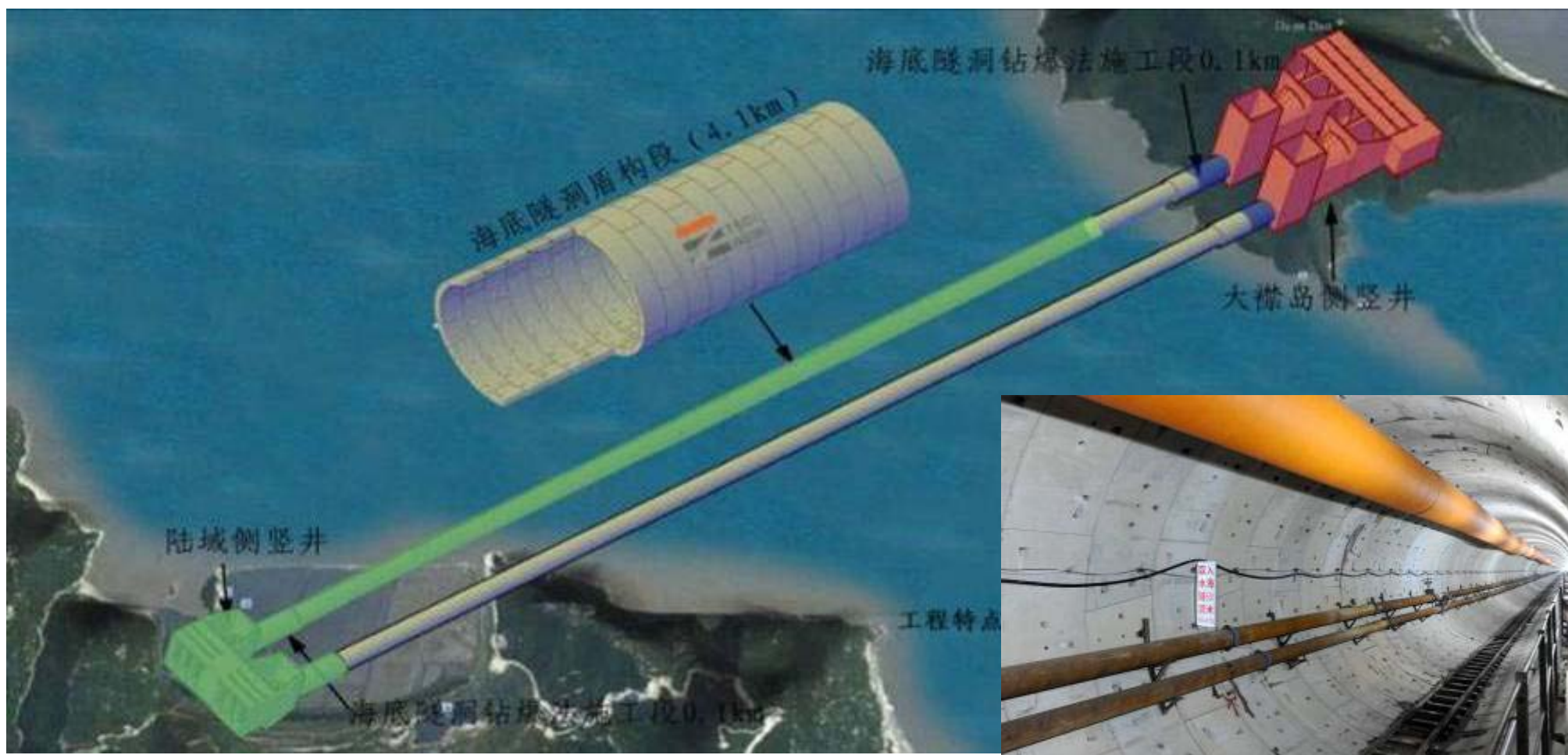
- Unit 2 HPX CW: Inlet gallery is completed. -13.75m raft is under construction; drum screen raft is completed, and wall is being constructed up to -10.5m.

Image progress of 2#HPX



Site Construction

- Seabed tunnel: 2693 segments have been completed (2708 segments for one tunnel), accounting for **99%** of the total.

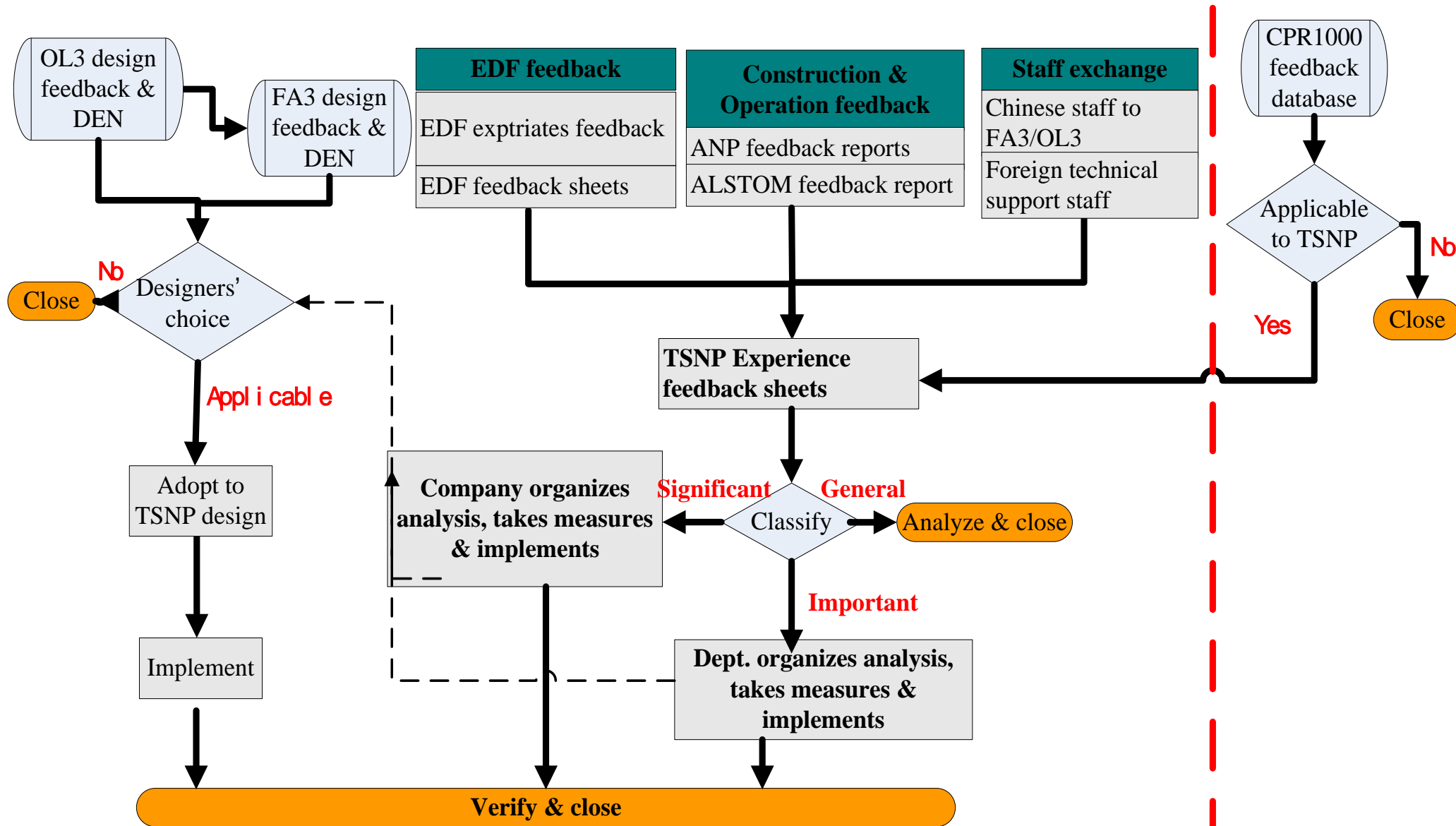


Erection and Commissioning

- Erection in NI was carried out on schedule on November 1st, 2010. 105102 points of erection has been done up to now.
- The commissioning organization was established in February of 2011 and has started its operation. On June 15th 2011, commissioning was carried out on schedule for the first processing system (SDA1).



Experience Feedback



Technology Innovation

- As the third EPR project in the world, Taishan Project referred to the experience from previous two projects, organized meticulously and overcame technical difficulties happened in construction, carried out innovative construction process such as **mass concrete placing and modular construction** in NI steel liner, created healthy experience for nuclear power construction in China.

Utilization of advanced construction techniques

- **Mass concrete single lift pouring**

The mass concrete was placed as a single lift, and is very successful. 9200m³ concrete was poured at one time for NI raft; 5600m³ concrete was poured at one time for TG pedestal foundation.

9200 m³ concrete
20% reinforcement saved
2851 m² formwork
12 sets of concrete spreader



TSNP phase I NI raft concrete pouring



Utilization of advanced construction techniques

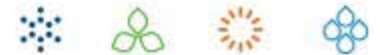
- **Steel liner modularized lifting and erection technique**

1# NI steel liner module No. 1 was successfully lifted on Mar.20th 2010. The top diameter and bottom diameter of this module is respectively 46.8m and 44.96m, with a height of 5m and a deadweight of 78t. The total weight of grid lifting device, module and lifting rigs amounts to approx.115t. A series of momentous technique innovations such as the use of grid lifting device and crawler crane travelling under 800t load.



Project Coordination Mechanism

- **Top Management Coordination:** In order to build a world-class nuclear power station in TSNP, CGNPC impelled main construction parties of TSNP (CNECC, CSCEC, DEC, Shanghai Electric, AREVA, EDF and ALSTOM) to establish top management coordination mechanism, negotiated and proposed benchmarking project guideline, coordinated regularly for solutions of important issues.
- **Dedicated Coordination Mechanism:** Regular coordination mechanism was established for critical paths and difficulties in project construction. Top management of owner and contractor participate and push forward dedicated task.
- **Main Contract Coordination Meeting:** Coordination meetings are held for difficulties and problems happened in implementation of design and supply contract for NI & CI , and in technical preparation and organization of NI construction.



Project Coordination Mechanism



EPR Showcase Project Indicators

- Statistics for the Implementation Status of Taishan EPR Showcase Project Indicators (Up to the end of June of 2011)

| Field | Result Indicator | status |
|------------------------|---|--------|
| Safety control | Mortality rate per100,000 persons = 0 | 0 |
| | Rate of safety accident per 200,000 man-hours ≤0.06 | 0.0302 |
| | Fire accident (times) = 0 | 0 |
| Quality control | Rate of implementation of experience feedback from major quality events of other EPR project under construction | 100% |
| | Recurrence of Major quality events in other EPR projects under construction = 0 | 0 |

EPR Showcase Project Indicators

| Field | Result Indicator | status |
|-------------------------|--|----------------------|
| Schedule control | Rate of on-schedule achievement of level I project milestones = 100% | 100% |
| | Rate of on-schedule achievement of level II engineering milestones \geq 80% | 75% |
| | Rate of on-schedule achievement of level II construction milestones \geq 85% | 70% |
| Cost control | Overall cost of the project (cost of completing the project) \leq approved overall budget. | meet the requirement |

- Note: the green color stands for meeting requirement or implementing smoothly as required by the indicators; the yellow color stands for slightly deviating from the indicator but no great impact; the red color stands for great deviating from the indicator and needs attention.



Content

Project
Introductio



Project
Progress



Main Tasks
in 2011



Level 1 Milestones in 2011

| SN | Level 1 Milestones | Scheduled target |
|----|-------------------------------------|------------------|
| 1 | 1#NI dome lifting | -- |
| 2 | 1#RPV delivery | 2011-11-30 |
| 3 | 1#NI polar crane available | 2011-12-15 |
| 4 | 2#NI erection start | 2011-09-01 |
| 5 | 1#CI main traveling crane available | 2011-12-15 |
| 6 | 1#turbine LP2 module delivery | 2011-10-15 |

THE END

Thanks!

