



Current Status of Site Selection and Evaluation for NPP in Thailand

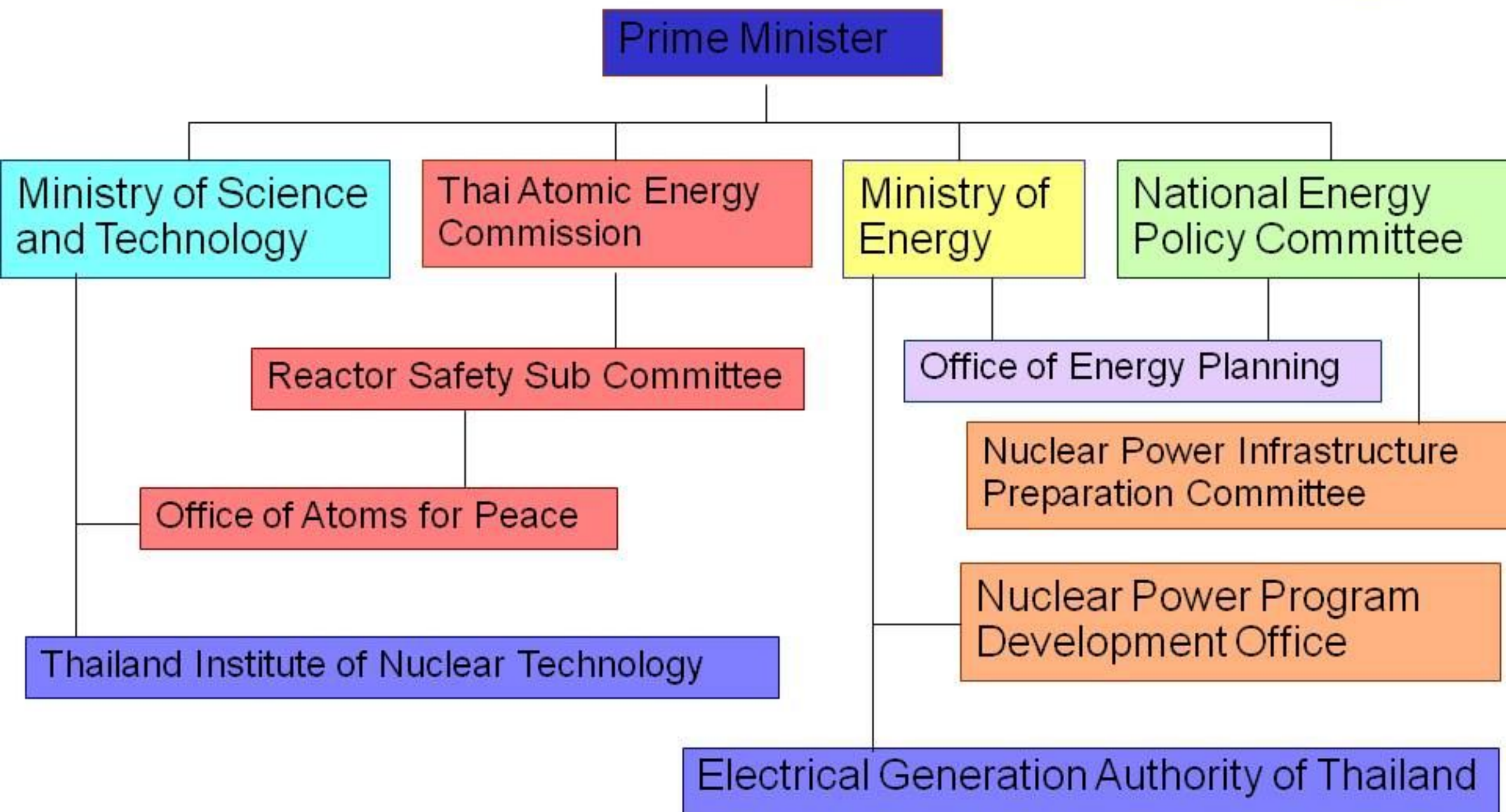


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Organization Chart





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	2009-2010	2010-2013	2014
Utility (EGAT)	Site survey	Site Selection	Submittal of EIA and Site Safety Analysis Report
Regulator	Establish site requirements and authorization process		OAP: Site Assessment ONEP: EIA Assessment

EGAT : Electricity Generating Authority of Thailand

ONEP : Office of Natural Resources and Environmental Protection



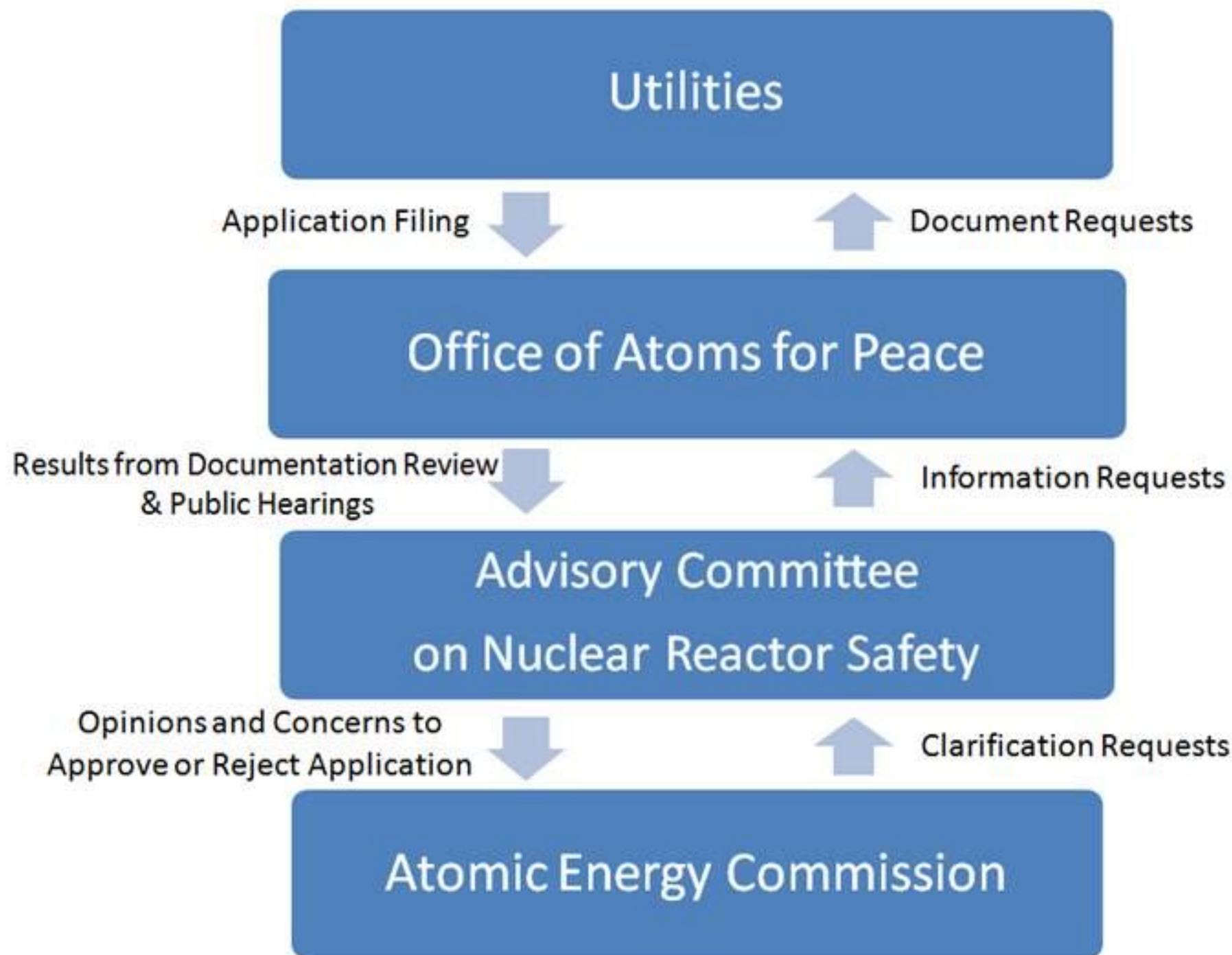
Thailand already has basic statutes, principally **the 1961 Thai Atomic Energy for Peace Act**. The Act established the **Thai-Atomic Energy Commission** and a licensing system applicable to activities in the nuclear field, including the production, possession and utilization of atomic energy and nuclear materials.

The act empowers the **Thai-Atomic Energy Commission** to deal with all matters in connection with the peaceful uses of nuclear energy, including setting the standards, rules for control and implementation of activities subject to licensing.



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Site Authorization Process





Site Requirements

- OAP set up site requirements and criteria base on IAEA , US-NRC and NuREG documents



Site Requirements (con't)

1. LPZ
2. External hazard on plant
3. Water cooling flow rate
4. Maximum flood
5. Max. precipitation rate
6. Max. elevation of ground water
7. Ground motion response spectra
8. Fault displacement
9. Liquefaction Potential



Site Requirements (con't)

- 10. Aircraft hazard
- 11. Chemical explosion
- 12. Accident airborne effluent release point
- 13. Routine airborne effluent release point
- 14. Design basis accident source term
- 15 etc.



Preparatory for Site Approval

- OAP's staffs lack of experience on site evaluation
- OAP has plans in increasing staff capability as follows:
 1. In house training about basic of Seismic, hydrology, meteorology,
 2. Set up focus group to response on specific areas.
 3. Cooperation with US-NRC for using tool or simulator for assessment.
 4. Cooperation with Thai experts from relevant organizations.



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Feedback from Integrated Nuclear Infrastructure Review (INIR) Mission (Jan 2011)

12. Site and supporting facilities –phase 1



Thailand launched a plan to **finish the pre-project activities phase** by the end of 2010 and expects to have government approval to proceed to the project implementation phase in 2011.

Based on the request from Thailand, and the submission of **the self-evaluation report** to the IAEA, an Integrated Nuclear Infrastructure Review (INIR) mission was conducted during 13-18 December 2010, by IAEA staff and an international expert.



Site and supporting facilities

Conditions	Basis for Evaluation
1. General survey of potential sites, conducted	<ol style="list-style-type: none">1. Report on site requirements, potential sites, selection of candidate site, issued and approved2. Adequate protection of the public and the environment in consistent with NS-R-33. NEPIO consultants for site selection are competent and with experience in site selection
2. Selected site(s) justified	<ol style="list-style-type: none">a) NPP site selection report demonstrates:<ol style="list-style-type: none">1. All of the candidate sites evaluated2. The selected are acceptable from nuclear safety3. Noise effects under construction considered4. Sites do not disturb culture objects and nature5. Sites do not affect individuals or communitiesb) NPP site selection report contains plans for additional studies in phase 2



12.1. General survey of potential sites, conducted

1. Report on site requirements, potential sites, selection of candidate site, issued and approved.
 - (a) Requirements for nuclear power plant site evaluation;

SE Status: No Action Needed

Main points from Self Assessment :

- a. The site requirements are defined in the TOR's Site and Environmental Scope of Work. The document also lists the applicable IAEA Standards and Guides. It also identifies and describes those factors that must be addressed in evaluating the NPP sites. The factors are weighted as part of the general category in which they fall (i.e., Engineering, Environmental, and Economic/Cost). The scaling of the factors, the weighting of the factors, and the weightings of the 3 categories were proposed by the Feasibility Study consultant.



12.1. General survey of potential sites, conducted (continued)

- (b) Regional analysis and identification of potential sites;
- (c) Screening of potential sites and selection of candidate sites;
- (d) Comparison of candidate sites.

Main points from Self Assessment :

- b. In 1992 EGAT developed a report "Preliminary Site Selection for Nuclear Power Plant in Thailand". A screening process was then utilized to identify 14 potential sites (within 5 candidate areas). Subsequently, in 2008-2010, the above results were further evaluated and resulted in the 14 sites selected for the initial Feasibility Study effort, and during the effort itself 3 more sites were added (for a total of 17 identified/ potential sites).
- c. The Reports describe the process of down-selecting from 17 sites to the 5 candidate sites.
- d. The comparison of the first 5 ranked candidate sites was performed.



12.1. General survey of potential sites, conducted (continued)

2. Adequate protection of the public and the environment in consistent with NS-R-3.

SE Status: No Action Needed

Main points from Self Assessment :

This requirement is provided in the TOR's for FS Site and Environmental Scope of Work, Part of Step 2 "Dose Assessment" which will utilize information from candidate NPP's which validates information having been derived consistent with IAEA Safety Standards series.

Apart from the Site study, the Reactor Technology Study addresses these issues and established the specific requirements to better ensure protection of the public and the environment from the harmful effects of ionizing radiation.



12.1. General survey of potential sites, conducted (continued)

3. NEPIO consultants for site selection are competent and with experience in site selection

SE Status: No Action Needed

Main points from Self Assessment :

For the NPP Feasibility Study, Burns and Roe was contracted by EGAT. Burns and Roe sub-contracted in-country site and environmental experts (TEAM Group Companies; TGC) to perform the data collection and initial analysis efforts for the Site Study work. TGC is comprised of 13 Thailand based companies, and TEAM's major services are engineering and environmental consultancies, including public participation and public relations.



12.2. Selected site(s) justified

- a) NPP site selection report demonstrates:
 - 1. All of the candidate sites evaluated
 - 2. The selected are acceptable from nuclear safety
 - 3. Noise effects under construction considered

SE Status: No Action Needed

Main points from Self Assessment :

- 1. All 17 sites have been evaluated and the results have been documented.
- 2. The final 3 selected sites are acceptable from all aspects, and in particular from the nuclear safety point of view.
- 3. For the efforts to date, no direct consideration has been made of the noise and visual effects during the construction and during operation. The further assesment related to these issues will be made in Phase 2.



12.2. Selected site(s) justified (continued)

a) NPP site selection report demonstrates:

4. Sites do not disturb culture objects and nature

5. Sites do not affect individuals or communities

Main points from Self Assessment :

4. The scope of work for Site Selection Study requires that there be an assessment, within a **50 km radius** of the preferred sites, with respect to potential impacts on historical sites, cultural heritages and popular tourist destinations.

5. The impact on population in terms of radioactivity risk and safety of preferred sites are acceptable based on the NPP site selection report.



12.2. Selected site(s) justified (continued)

- b) NPP site selection report contains plans for additional studies in phase 2

Main points from Self Assessment :

- b) The NPP FS includes a high level schedule of further Phase 2 required activities, and items of that schedule include the need for an Environmental Impact Assessment (EIA), Strategy Impact Assessment (SIA), and Health Impact Assessment (HIA). These studies are being planned and budgeted as part of the Phase 2 effort and will need to be considered in preparing the Engineering Procurement Construction Request for Proposal (EPC RFP).



Conclusion

Thailand (EGAT) performed the NPP site specific activities for Phase 1 in a systematic way. These activities were started earlier and all the results for the selected sites were included in the NPP FS performed by EGAT's Consultant in Phase 1.



Conclusion

12. Site and supporting facilities	Phase 1		
	Actions needed		
	SIGNIFICANT	MINOR	NO
12.1 General survey of potential sites, conducted			X
12.2 Selected site(s) justified			X



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Thank you

Office of Atoms for Peace
16 Vibhavadi-Rangsit Road
Bangkok 10900, Thailand
Fax. 66 2 561 3013
www.oaep.go.th