AB 1632 Assessment of California's Operating Nuclear Plants

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AB 1632 Overview

In 2006, the California Legislature enacted Assembly Bill (AB) 1632 (Blakeslee)

AB 1632 directs the Energy Commission to assess the potential impacts to the state from relying on large baseload power plants including:

- Vulnerability of the plants to a major disruption caused by a large seismic event or plant aging
- Potential impacts of such a disruption on system reliability, public safety, and the economy
- Costs and impacts from nuclear waste accumulating at plant sites, and
- Other major policy issues related to the future role of these plants

Diablo Canyon and San Onofre (SONGS) are the only plants that meet the AB 1632 definition for baseload plant

Study Overview

- Objective of AB 1632 Consultant Report is to provide assessments and information to policymakers about Diablo Canyon and SONGS
- Energy Commission's Electricity and Natural Gas Committee is developing a Committee Report
- Assessments are to be completed as part of the Integrated Energy Policy Report (IEPR) process and adopted by the Energy Commission in November 2008

Public Input Process

- Stakeholders provided opportunity to comment on proposed study plan, recommend literature to review, and comment on draft reports
- Public workshops on draft AB 1632 Consultant Report and on draft AB 1632 Committee Report
- Seismic Vulnerability Advisory Team reviewed and commented on RFP, proposed study plan, and early drafts of seismic vulnerability assessment and will review seismic sections of the draft AB 1632 Committee Report

Important Dates

- October 2 – Written comments on draft AB 1632 Consultant Report are due
- October 10 - Release draft AB 1632 Committee Report
- October 20 - Hold public workshop on draft AB 1632 Committee Report
- October 22 – Written comments on draft AB 1632 Committee report are due
- October 30 - Release final AB 1632 Committee Report
- November 5 - Adoption of AB 1632 Committee Report
- November 19 - Adoption of 2008 IEPR Update

Consultant Report Process

- Interdisciplinary Study Team includes licensed engineers, geologists, and experts in nuclear energy policy, economic and environmental analysis of energy resources, and production cost modeling
- Independence of analysis maintained by not meeting with plant owners or other interested parties
- Study based on existing scientific studies, other documents in the public domain, and information provided by the plant owners in response to data requests

Preliminary Findings

Seismic Vulnerability Assessment

- Both plants were designed to withstand Safe Shutdown Earthquakes without suffering damage that would threaten public safety
- The seismic setting of Diablo Canyon is better understood than the seismic setting of SONGS
- Seismic ground motions at SONGS could be larger than was anticipated when the plant was designed
- The Hosgri Fault dominates the seismic hazard at Diablo Canyon

Seismic Vulnerability Assessment (cont.)

- Non-safety related plant components are most vulnerable to earthquake-induced damage
  - Further analysis of seismic design criteria for non-safety related components is needed
- Updated tsunami hazard assessments are needed
  - This is most critical for SONGS
- Diablo Canyon and SONGS have re-racked their spent fuel pools, posing a higher degree of risk than less densely packed pools

Plant Aging Assessment

- Capacity factors at both plants remain high, indicating that plant aging is not yet significantly impairing operations
- Plant aging issues at other U.S. nuclear plants could affect California's plants through regulatory actions
- Recent developments point to safety culture concerns at SONGS
- The plant workforces are aging, potentially creating a knowledge and institutional memory drain

Economic Issues

- No electricity supply shortages would occur as the result of either Diablo Canyon or SONGS being unexpectedly shut down in the near term
- Plant reliability is a key uncertainty in assessing the cost of power that would be produced during an extended license period
- The state and local economic benefits provided by the nuclear plants could be provided by renewable facilities; however, the benefits might accrue to different localities

Nuclear Waste Accumulation

- Accumulation of nuclear waste at the plant sites is a long-term concern
- After ISFSI is completed, Diablo Canyon will have sufficient spent fuel storage to
  - operate past the plant's current license, or
  - decommission the spent fuel pool when the current license expires
- SONGS will run out of spent fuel storage capacity just before the plant's current license expires
- A low-level waste disposal facility is no longer available to accept low-level waste from SONGS and Diablo Canyon except for Class A waste

Environmental Issues

* Long-term, on-site dry cask storage should not prevent the transition of decommissioned plant sites to alternative uses
* California could rely on renewable energy to replace the energy from Diablo Canyon and SONGS; however, backup power from fossil fuel plants would be required to maintain a reliable energy supply

Public Comments