

## STPEGS UFSAR

The following information is "**historical, not design/licensing basis information**". This information supported initial licensing decisions. This information is considered redundant to the information required by 10CFR50.34 and found in the regular sections of the UFSAR.

### Question 730.1N

The Atomic Safety and Licensing Appeal Board in ALAB-444 determined that the Safety Evaluation Report for each plant should contain an assessment of each significant unresolved generic safety question. It is the staff's view that the generic issues identified as "Unresolved Safety Issues" (NUREG-0606) are the substantive safety issues referred to by the Appeal Board. Accordingly, we are requesting that you provide us with a summary description of your relevant investigative programs and the interim measures you have devised for dealing with these issues pending the completion of the investigation, and what alternative courses of action might be available should the program not produce the envisaged result.

There are currently a total of 26 Unresolved Safety Issues discussed in NUREG-0606. We do not require information from you at this time for a number of the issues since a number of the issues do not apply to your type of reactor, or because a generic resolution has been issued. Issues which have been resolved have been or are being incorporated in the NRC licensing guidance and are addressed as a part of the normal review process. However, we do request the information noted above for each of the issues listed below:

1. Waterhammer (A-1)
2. Steam Generator Tube Integrity (A-3)
3. ATWS (A-9)
4. Reactor Vessel Materials Toughness (A-11)
5. Steam Generator and Reactor Coolant Pump Support (A-12)
6. Systems Interaction (A-17)
7. Seismic Design Criteria (A-40)
8. Containment Emergency Sump Performance (A-43)
9. Station Blackout (A-44)
10. Shutdown Decay Heat Removal Requirements (A-45)
11. Seismic Qualification of Equipment in Operating Plans (A-46)
12. Safety Implications of Control Systems (A-47)

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### 13. Hydrogen Control Measures and Effects of Hydrogen Burns on Safety Equipment (A-48)

#### Responses

In the Safety Evaluation Reports for Virgil C. Summer and Commanche Peak (NUREG-0717 and NUREG-0797), the NRC Staff concluded that those plants could be operated prior to final resolution of the unresolved safety issues. The reasoning that led to these conclusions is applicable to STPEGS. In general, HL&P agrees with the previous NRC staff assessments of these issues. Therefore, it has been concluded that STPEGS can be operated without risk to the health and safety of the public. Programs and measures taken for dealing with these generic issues are discussed below.

#### Question 730.1N

##### A-1 Waterhammer

Refer to evaluation in sections 10.4.7 and 10.4.9.

#### Question 730.2N

##### A-3 Steam Generator Tube Integrity

Bechtel, HL&P, and Westinghouse are participating in a joint Task Force to examine FW cycle water chemistry control and steam generator options for STPEGS. The purpose of these studies is to determine options available for minimizing the long-term degradation of the steam generators from corrosion.

#### Question 730.3N

##### A-9 Anticipated Transients Without Scram

Refer to Sections 4.3.1.7 and 15.8.

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Question 730.4N

### A-11 Reactor Vessel Materials Toughness

The current Westinghouse specification for reactor vessel materials (which encompasses the STPEGS reactor vessels) limits the amount of copper, phosphorus, and vanadium permitted in order to reduce the effect of radiation on the vessel fracture toughness. Vessels fabricated to these requirements will maintain high fracture toughness properties throughout plant life. For additional information regarding compliance to Appendix G, "Fracture Toughness Requirements", of 10CFR50, refer to Section 5.3 and the responses to NRC questions 121.4, 121.11, and 121.14.

Question 730.5N

### A-12 Steam Generator and Reactor Coolant Pump Support

The STPEGS steam generator and reactor coolant pump (RCP) supports were designed to meet the requirements of ASME Section III, Subsection NF. Refer to Sections 3.8.3.4.3 and 5.4.14. Westinghouse has concluded that compliance with Subsection NF is sufficient to resolve the concerns expressed in NUREG-0577. As of October 1983, in accordance with the staff recommendation in NUREG-0577 (Rev. 1), no further actions are required for operating PWRs and for current CP and OL applicants. It was concluded that no safety benefit would be derived from the verification of material fracture resistance, and other corrective measures were not justified on the basis of arguments presented and supported by the value-impact analysis.

Question 730.6N

### A-17 Systems Interaction

The fundamental plant design philosophy at STPEGS dictates that safety-related systems be redundant, independent, and provided with adequate isolation to preclude unacceptable systems interaction. An STPEGS Systems Interaction Design Guide is being developed and will include guidance for separation and consideration of fire, flooding, seismic II/I, missiles, single failure, and pipe break effects.

Question 730.7N

### A-40 Seismic Design Criteria

As discussed in Section 3.7, STPEGS has been designed to meet the project commitments for seismic design.

Question 730.8N

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### A-43 Containment Emergency Sump Performance

The STPEGS Containment emergency sump design bases are described in Section 6.2.2.1.2. Performance of the sumps has been evaluated in accordance with RG 1.82 proposed Revision 1, May 1983.

Question 730.9N

### A-44 Station Blackout

STPEGS is evaluating the reliability of the AFW given a loss of all AC power. This evaluation is being performed in response to the March 10, 1982 NRC letter and has been submitted to the NRC at a later date. A response to Generic Letter 81-04, discussing emergency procedures and training, was provided by letter from J. H. Goldberg to Darrel G. Eisenhut, May 12, 1982.

Question 730.10N

### A-45 Shutdown Decay Heat Removal Requirements

STPEGS has addressed the capability to achieve cold shutdown as identified by Branch Technical Position RSB 5-1. This capability is discussed in Appendix 5.4.A.

Question 730.11N

### A-46 Seismic Qualification of Equipment in Operating Plant

STPEGS will be evaluating safety-related equipment on a case-by-case basis regarding the impact of qualifying equipment to the newer NRC positions in Regulatory Guide (RG) 1.100 which calls out IEEE 344-1975. A decision can then be made to determine what type of action, if any, is desirable.

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Question 730.12N

### A-47 Safety Implications of Control Systems

STPEGS has been designed with the goal of ensuring that control system failures will not prevent automatic or manual initiation and operation of any safety equipment required to trip the plant or to maintain the plant in a safe shutdown following any "anticipated operational occurrence" or "accident". STPEGS accomplishes this by the use of independence between safety and nonsafety systems or by providing qualified isolation devices between safety and nonsafety systems. The independence of redundant safety-related systems is discussed in Section 7.1.2.2. With reference to nonsafety-related instrumentation, STPEGS is presently finalizing the design of the nonsafety related instrumentation power distribution system. A failure modes and effects analysis will be performed on this system and will be presented at a later date as part of answers to NRC questions 032.42, 032.44, and 032.45.

The failure modes and effects analysis presented in Chapters 7 and 8 for safety-related instrumentation illustrates that failures of individual sensors, losses of power to protection separation groups, etc., all result in events which are bounded by the Chapter 15 analyses.

Question 730.13N

### A-48 Hydrogen Control Measures and Effects of Hydrogen Burns on Safety Equipment

The Combustible Gas Control System is discussed in Section 6.2.5. This system is designed to meet the source term assumptions of RG 1.7 (Rev. 1). For these source terms hydrogen burn is not considered credible since system design will maintain hydrogen concentration below 4 percent.

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