

January 8, 1997

John Beaulieu, Oregon Department of Geology
800 N.E. Oregon St.
Portland, OR.

DEPARTMENT OF
ENERGY

Dear John,

The Oregon Office of Energy (OOE) would appreciate your comments on Portland General Electric's position regarding the potential for ashfall at the Trojan site.


We are currently reviewing PGE's request to move their spent nuclear fuel out of the spent fuel pool and into dry storage casks. The dry casks would be located at the Trojan site, roughly 100 meters from the current fuel building. The casks are outside and use natural air circulation for cooling. The design proposed would have nuclear fuel stored in sealed, airtight steel capsules, which in turn are placed in a concrete cask. The concrete casks have air vents at the top and bottom for air flow. If these vents are clogged, then cooling is reduced.

PGE's analysis shows that the casks would not tip over or be damaged in the event of a "design basis" earthquake. They based this analysis on the same "Seismic Margin Event" which we reviewed in 1993. You will recall that this analysis predicted peak ground accelerations of .38g. We are satisfied that PGE's casks are designed appropriately for the earthquake hazard. However, a question remains about the possibility of ashfall.

OOE asked PGE to address the question of possible clogging of the air vents after a volcanic eruption. PGE's response cites studies in "Volcanic Hazard Zonation for Mt. St. Helens, Washington, 1995", by Edward Wolfe and Thomas Pierson (U.S.G.S. Open File Report 95-497). The study essentially says there is low probability of significant ashfall. The NRC also asked about the potential effects of ashfall on cooling. PGE's response to the NRC is attached.

The arguments in PGE's response seem plausible to us, but we would like DOGAMI's opinion. PGE appears to be saying that special procedures for ashfall are unnecessary because of the low probability of significant ashfall. We would appreciate your comments on this position. Thank you in advance for your help. Feel free to call me at Trojan (556-0005).

Sincerely,



Adam Bless
Trojan OOE Resident Inspector

Attachment: pp. 97, 98 from PGE letter VPN-085-96

cc: Ray Pate, PGE
Lawrence Kokajko, NRC

John A. Kitzhaber
Governor



625 Marion Street NE
Salem, OR 97310
(503) 378-4040
FAX (503) 373-7806
Toll-Free 1-800-221-8035

9701230225 970108
PDR ADOCK 05000344
W PDR

Question:

- 8-8 (a) *Discuss the procedure or technical criteria for inspecting the internal air passages of the Trojan ISFSI casks to determine acceptability for continued use in the event of a volcanic eruption as described in § 8.2.11.*
- (b) *Explain the basis for assuming that the magnitude of any future eruption of Mt. St. Helens would be equal to the magnitude of the previous eruption and not larger in magnitude and concomitant ash generation.*

Although this section indicates that the most conservative ash accumulation from a future Mt. St. Helens eruption would not block the air passages, it is conceivable that ash could be drawn into the internal labyrinthine air passages and deposit on surfaces, thus restricting air flow and degrading decay heat removal for a long period of time without detection.

*Licensing Basis:
10 CFR 72.90
10 CFR 72.92
10 CFR 72.122(b)(2)(i)*

PGE Response:

- 8-8 (a) The volcanic eruption evaluated in Section 8.2.11 is identified as an Infrequent (Accident) Event in accordance with ANSI/ANS 57.9 (see SAR Table 8.0-2). Proposed Trojan ISFSI Technical Specification (PGE 1071) Section 5.7.1.1(g) requires written procedures to be established, implemented, and maintained which address the response to ISFSI Off-Normal and Accident conditions. This event will be addressed and controlled by Technical Specification procedures. Although these procedures are not yet written, they will specify required response times, inspections, engineering evaluations, and corrective actions. Additionally, Technical Specification surveillance requirements SR 3.1.1.1 and 3.1.1.2 would still mandate verification of cask air outlet temperature every 12 hours and a visual inspection of air inlet and outlets every 24 hours. PGE feels that these actions would preclude undetected restricted air flow and degraded decay heat removal capability.

- (b) The proposed Trojan ISFSI SAR concludes that the effects of future Mt. St. Helens eruptions (ash fall, mud flow, and flooding) would be of minimal consequence because most of the summit and the previously bulging north flank were removed during the May 18, 1980 eruption, thus little material is available to contribute mass or potential energy. Without this mass or energy, the probability of a future eruption being greater in magnitude is extremely low. Because of the shape of the existing crater, eruption products would be largely directed to the north. Because of the lesser mass and energy available, the effects away from the immediate flanks of the volcano would be much less than those which occurred on May 18, 1980. Additionally, repose intervals of Mt. St. Helens between violent eruptive sequences have generally exceeded 100 years and are not known to be less than 50 years for lesser eruptions.

Question:

- 8-9 *Provide the structural analysis for the accident scenario of the PWR basket supporting the full weight of the TC due to the inadvertent lifting during transfer to the concrete cask or to the shipping cask.*

This scenario was considered in previous SNC submittals and it is still valid, because there is no means provided to prevent the crane operator from lifting the loaded basket too far, inside the TC during transfer operations. This RAI is in response to information supplied in § 8.2.13.

*Licensing Basis:
10 CFR 72.122(b)*

PGE Response:

- 8-9 The inadvertent attempt to lift the basket out of the transfer cask would result in lifting the transfer cask by its cover plate. The structural analysis of the cover plate and its bolts is provided in Sections 4.7.4.1.5 and 4.7.4.1.6 respectively, of the SAR.