



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

NRC PDR

September 19, 1980

Docket No. 50-344

THIS DOCUMENT CONTAINS  
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Dr. Beth Packer  
Portland Chapter  
Physicians for Social Responsibility  
Box 299, Route 1  
Portland, Oregon 97231

Dear Dr. Packer:

This is in response to your telegram of July 27, 1980 regarding Mount St. Helens and the Trojan Nuclear Plant.

In response to your concerns, I am enclosing a technical report which discusses in detail the possible impact of volcanic activity at Mount St. Helens on the safety of Trojan. The report is in the form of an affidavit which was filed with the Atomic Safety and Licensing Board in the Trojan spent fuel pool proceeding. Although this report was filed prior to the recent volcanic activity, it is with few exceptions considered an accurate assessment today. Exceptions to the report include (1) the underestimation of the volume of debris associated with a potential mudflow, (2) exclusion of a discussion of volcano-induced earthquakes, and (3) the statement that historic data indicates that the volcano has been substantially more active in the 19th century than the 20th century. Notwithstanding the above exceptions, the report's conclusion that the Trojan site is suitable from a volcanic hazards point of view remains accurate.

The recent massive eruption of May 18, 1980 exceeded that envisioned by the Nuclear Regulatory Commission and by our advisors, the U. S. Geological Survey. Nevertheless, the effects of the recent volcanism (mudflows, earthquakes and ashfall) at the Trojan site have been minimal. Mudflows in the Toutle, Kalama, and Lewis River valleys have not compromised the safety of the Trojan plant. Volcanic-induced earthquakes have been small and have neither been felt nor recorded instrumentally at the site. Ashfall at the Trojan plant resulting from the May 25, 1980 eruption has been slight (not exceeding 1/8 of an inch) and fell at the site in the form of a muddy rain or mist. The only other indication of ash occurred on April 29, 1980 when a thin coating of the ash was noted at the Trojan site.

According to University of Washington seismologists, the volcanic-induced earthquakes mentioned previously have not exceeded Richter Magnitude 5.1 and have been concentrated in an area roughly coincidental with the volcano crater which is 35 miles northeast of the Trojan plant. None of the larger events (Magnitude 5.0 and above) have occurred closer than 35 miles to the plant. For the most part, the volcanic earthquakes have occurred at shallow depths and have consequently been felt only in the immediate vicinity of the seismic

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event. However, there have been unconfirmed reports of volcanic-related earthquakes (originating at Mount St. Helens) being felt in the Longview-Kelso, Washington area, roughly five miles north of the Trojan plant. Apparently, those feeling the tremors were located in areas where soil overlies bedrock. The plant is designed to safely withstand seismic levels of 0.25g peak ground acceleration. This corresponds to earthquake levels many times greater than those generated by the volcano-induced earthquakes.

The potential impact of volcanic activity on the safety of the Trojan facility was investigated thoroughly by government geologists (Atomic Energy Commission and the U. S. Geological Survey) before the plant was allowed to be constructed where it is. This investigation and reassessment of volcanic-related hazards has continued as attested by the enclosed affidavit. We have been in constant contact with numerous state, governmental agencies, and university scientists since initiation of earthquake activity and subsequent volcanic activity in the vicinity of Mount St. Helens on March 20, 1980. This surveillance and accumulation of information will continue as long as the volcano remains active.

As to evacuation under severe ashfall conditions, this can cause transportation problems somewhat similar to those produced by road icing or heavy snowfall. The first protective action to be taken following a radiological emergency at a nuclear facility is to alert the public to take shelter and await further instructions. Seeking shelter in homes is an effective protective measure under most circumstances. A decision to evacuate is based on an assessment of the potential injury to the public from the accident and must be balanced against the risk to the public from the evacuation itself and against the conditions that prevail at the time. Seeking shelter would have to be given greater weight under ashfall conditions, depending on its severity.

Therefore, if an accident occurred in combination with transportation difficulties due to severe volcanic ashfall, effective protecting measures can still be implemented, albeit with greater difficulty. The probability of these two events occurring simultaneously is, however, extremely low.

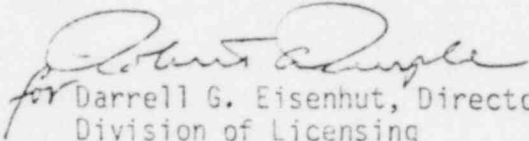
Our conclusion, based upon an evaluation of volcanic phenomena prior to construction, coupled with an assessment of the effects of the activity beginning March 20, 1980, is that the Trojan site remains suitable from a volcanic

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hazards viewpoint. Nevertheless, we will continue to monitor, accumulate, and assess information related to the renewed activity at Mount St. Helens as it might apply to the safety of the Trojan Nuclear Plant.

Sincerely,

  
for Darrell G. Eisenhut, Director  
Division of Licensing  
Office of Nuclear Reactor Regulation

Enclosure:  
Affidavit of R. B. McMullen