

October 22, 1980

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING APPEAL BOARD

In the Matter of Portland  
General Electric Company,  
et al., (Trojan Nuclear  
Plant)

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) Docket No. 50-344 (Control  
) Building)  
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)



STATE OF OREGON'S BRIEF IN SUPPORT OF ITS  
EXCEPTIONS TO THE INITIAL DECISION AND  
ORDER REGARDING MOTION BY STATE OF OREGON  
FOR RECONSIDERATION OF INITIAL DECISION

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On completion of the evidentiary hearing, the licensee, the staff, and Oregon submitted proposed findings of fact and conclusions of law. Oregon's findings of fact and conclusions of law focused only on the issue of reporting requirements. The licensee and the NRC staff responded in writing to Oregon's proposed findings and conclusions of law. On July 11, 1980, the initial decision was issued by the Licensing Board without the proposed findings and conclusions of law submitted by Oregon. On July 23, 1980, Oregon simultaneously moved for reconsideration of the initial decision and filed this appeal. Pursuant to the July 28, 1980, Order of the Appeal Board, the Licensing Board on September 4, 1980, issued its "Order Regarding Motion by State of Oregon For Reconsideration of Initial Decision" again rejecting Oregon's proposed findings and conclusions of law. Due to a delay in serving the Licensing Board's Order on Oregon, the Appeal Board granted, in its September 15, 1980 Order, leave for Oregon to file Amended Exceptions To the Initial Decision until September 29, 1980. On September 23, 1980, Oregon filed its Amended Exceptions To the Initial Decision and the Licensing Board's September 4 order.

### III

#### OREGON'S EXCEPTIONS NO. 1-5, 7, AND 9

#### A

#### SUMMARY

The Licensing Board's decision to not require accelerated reporting of design changes is contrary to the NRC's obligation

to protect the public health and safety. The need for accelerated reporting is evident from the unique nature of the engineering determinations required during this proceeding. Accelerated reporting should not be a burden on a licensee and is authorized by existing regulations.

B

The Adequacy and Accomplishment of the  
Modification of the Control Building Complex is  
an Issue Directly Affecting the Public Health and Safety

The fundamental purpose of NRC regulation of nuclear power is the protection of public health and safety. This is, of course, true in licensing amendment proceedings such as this case.

Northeast States Power Company (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB 455, 7 NRC 41 (1978). 42 USC 2133.

There is no question that seismic qualification of the Trojan Nuclear Control Building complex is of significance to the public health and safety. cf. 10 CFR Part 50 Appendix A (General Design Criteria For Nuclear Power Plants).

The purpose of the Control Building complex modifications and the central issue in the Phase II proceeding is to restore desired margins of safety in the event of a "safe shutdown earthquake" (SSE). Initial Decision p 13, TR 3348 (Herring). In accordance with licensee's desire to continue operation of the plant during the several months of modification work, another important subject in the proceeding was the potential impacts of the modification work on the plant's safety during operation.

an example of the many safety concerns before the Licensing

Board is the issue of the seismic capability of the plant during the phases of the construction work which will require removing some structural elements while the plant remains in operation. Oregon, as did the staff and licensee, presented expert testimony on the necessity of maintaining careful sequencing of the construction so as not to unduly reduce the seismic capability of the existing structure. State of Oregon Exhibits 2 and 2a, TR 4340, and TR 4463 - 4467. The safety importance of the construction sequence proposed by the licensee was recognized in the Licensing Board's opinion and made a condition in its order. Initial Decision p. 44, 45 and 63 - 65. Other safety issues included such important matters as protection of cable trays, fire protection, control of dust, and seismic qualification of piping supports, as well as the fundamental issue of the adequacy of the design of the modifications. Initial decision p. 37 and 38 - 45.

In short, the record of the proceeding as reflected in the Licensing Board's initial decision shows that the modification of the Trojan Control Building is directly related to the public health and safety.

C

The Engineering Design and Review of the Proposed Modification Required a Unique, "State of the Art" Effort BY NRC Staff Experts and Licensee's Experts

As noted above, completion of the NRC staff review of the design of the proposed modifications took more than one year. Highly qualified expert consultants were utilized by the staff

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I

INTRODUCTION

Oregon does not oppose the design of the modifications of the Trojan Control Building necessary to meet seismic safety requirements or the schedule for accomplishing the modification work as approved by the Licensing Board. Oregon's exceptions reflect its belief that technically qualified Nuclear Regulatory Commission staff personnel should continue their immediate involvement in this matter.

As will be more fully set forth below, the design of the modifications in the Trojan Control Building complex reflects months of complex and often controversial engineering effort by the licensee, certain NRC staff experts and others. The design solutions that were approved by the Licensing Board are undoubtedly a product of "state of the art" engineering applied in a context directly affecting the public health and safety, the

seismic qualification of the Trojan Control Building.

It is Oregon's position that the public health and safety requires accelerated reporting under 10 CFR 50.59(b) of changes by the licensee in the Control Building modifications to the NRC staff experts who participated in designing the modifications and who are technically qualified to conduct a meaningful review of the safety determinations of the licensee. In contrast, the annual reporting of changes approved by the Board under 10 CFR 50.59 provides no mechanism for timely review of the licensee's decisions on a project that will be substantially completed by mid 1981.

By means of exceptions 1 - 9, Oregon is asking this panel to substitute its judgment for that of the Licensing Board to reach a result which Oregon submits will better protect the public health and safety. Niagra Mohawk Power Corporation (Nine-mile point nuclear station, Unit 2) ALAB 264, 1 NRC 347, 357 (1975).

## II

### STATEMENT OF THE CASE

On May 26, 1978, the NRC staff issued a modification order resulting from the discovery that due to several engineering design errors, the structural capacity of the Trojan Control Building in its "as built" condition did not meet the originally intended and licensed seismic capability and safety margins. 43 FR 23678. The NRC staff order provided an opportunity for a hearing which was requested by several persons. Subsequently, an Atomic Safety and Licensing Board Panel was convened. In Phase I



of its proceeding the Licensing Board approved interim operation of the plant with certain limiting conditions. Partial Initial Decision, December 21, 1978, 8 NRC 717. From on or about May 26, 1978, until the Phase I initial decision, the Trojan Plant remained shut down on the basis of a determination by the Nuclear Regulatory Commission that a significant hazards consideration was involved. Commission Order, July 7, 1978. The cost of the shutdown to the licensee was substantial and has led to litigation between the licensee and the builder of the plant on the subject of direct and consequential damages. See Portland General Electric Company v. Bechtel Corporation, Civil No. 79-103 (DC Or June 4, 1980).

In March of 1979, a prehearing conference was held on Phase II of the hearing which was to involve the structural adequacy of the modifications and the safety aspects of their implementation. During a year of discovery between the parties and lengthy discussions between the NRC staff and the licensee, the hearing was repeatedly delayed. See e.g. Licensing Board's orders dated September 18, 1979 and November 30, 1979. A second prehearing conference was held on March 11, 1980. The Phase II evidentiary hearing was finally held on March 31 through April 3 and April 16 and 17, 1980.

As it did in Phase I of the proceeding, Oregon participated fully in the Phase II hearing by submitting interrogatories and testimony and cross-examination of the direct testimony of witnesses presented by the NRC and the licensee.

and licensee on a variety of issues. Intense efforts by NRC staff experts, particularly Mr. Herring, were necessary. In a special hearing held during this period, the Licensing Board asked both the licensee and the staff why the review was so difficult and time consuming. The licensee and the staff agreed that the problems posed were unique and represented the "state of the art" in civil engineering. TR 3274 (BROEHL). The NRC staff expert, Mr. Herring, testified:

"This is a little bit different than your normal review. As was alluded to, you don't have the code to rely upon and the margins intended in there. And part of the resolution of the modification issue is to assess yourself that there are levels of margin that would meet the intended margins.

If you don't have a code and you're relying on test data, you're starting to push the state of the art of civil engineering. There are more uncertainties associated with going to higher levels in the determination of capacity and in the determination of the required broadening of the response spectra peaks. And the questions that I have been asking have been attempting to get a good handle on the error band associated with the numbers being reported.

But, again, when you're pushing the state of the art, the numbers being reported are not firm numbers. There is an error band associated with those numbers, and it's important to be able to assess that that error band is adequately accounted for in peak broadening and in these capacities."  
TR 3333.

During the evidentiary hearing, the licensee's experts acknowledged the complexity and difficulty involved in their

Review:

"The next item, perhaps, in our testimony goes to the matter that because of the complex nature of the buildings in this complex, and I mean the type of construction which utilizes a steel frame, in many cases a thick concrete core, faced on masonry exterior and interior, a very difficult sandwich to digest, that the existing codes, in fact, do not deal with such structures. The existing codes are usually developed either for reinforced concrete structures or prestressed concrete structures or steel structures. But when the structure involves the various materials in one composite, one gets into problems of interpretation of codes that are just intractable and inapplicable." TR 4420.  
(Bressler)

Oregon also found it necessary to hire an expert consultant, Dr. Laursen, in order to fully participate in the review of the proposed modifications.<sup>1</sup> Thus, the lack of building code or other accepted data which are specifically and completely applicable to the construction of the Trojan complex made it necessary to rely on a testing program and to perform a detailed and complex analysis unique to the Trojan complex (Licensee Exh. 28 pp. 11, 23a, 25, 33, 43, 59; Staff Exh. 17A pp. 42, 53; TR 3274, TR 3278, TR 3280, TR 3283, TR 333 (Herring), TR 3608, TR 4356; TR 4420 (Bressler)).

Because of the complexity and unique nature of the engineering design safety questions that had to be resolved during the two-year course of this proceeding, differences in engineering judgment necessarily arose between the staff and licensee (Staff Exh. 17a pp. 11-17, 20-22, 26, 28, 37-40, 54; Licensee Exh. 28 pp. 46, 66, 68, 73, 77; TR 3903,

TR 4402-4403, TR 4628). These engineering judgment differences between the staff and the licensee were resolved at the evidentiary hearing. However, certain analyses, including review of the seismic qualification of safety related equipment due to the widened response spectra, certain details of construction plans and the modification design and other matters are not finalized and may be subject to changes. (Licensee Exh. 28 pp. 64; Staff Exh. 15a pp. 25-27; TR 3727, TR 4373, TR 4647, TR 4622-4627, TR 47504753, TR 4789). In sum, the record of the Phase II proceeding makes it clearly evident that the design and review of the modifications of the Trojan Control Building involved complex, "state of the art" civil engineering requiring utilization of highly qualified experts.

D

The Initial Decision Fails to Protect The  
Public Health and Safety By Failing to Provide  
For Timely Staff Review of the Safety of Changes  
in the Modifications Made By the Licensee

Oregon's main concern is that the Initial Decision permits the licensee to change the design of the modifications or construction plans that were approved by the Licensing Board and which were subject to the scrutiny of the parties in this proceeding. The licensee need only follow the requirements of 10 CFR 50.59 which permits the licensee to unilaterally determine whether a change is significant or presents a safety hazard.<sup>1</sup> 10 CFR 50.59(a). Initial Decision pp. 57. Reporting of the licensee's determinations is required only on an annual basis to

the appropriate NRC regional office. 10 CFR 50.59(b). In other words, the initial decision allows the licensee to make determinations relating to the safety of the proposed modifications without timely review by the NRC staff. Furthermore, as the licensee's reports of its determinations need only be filed annually with the NRC regional office, it is likely that the licensee's determinations would not be seen by the NRC staff experts in the office of Nuclear Reactor Regulations who participated in the "state of the art" engineering review and design described above. In any event, the nature of the modifications which involve, for the most part, installation of concrete and steel plates makes any "after the fact" review of a change of a licensee a review of a *Fait Accompli*, set in concrete.

Plainly put, after more than a year of highly sophisticated, often controversial "state of the art" engineering involving all the parties to this proceeding, the Initial Decision leaves changes in what has been reviewed effectively solely up to the licensee's discretion.

It may be argued that eventually the required review of the licensee's determination will be completed by appropriate, qualified NRC staff under 10 CFR 50.59. An eventual review, however, is not sufficient to protect the public health and safety when, as here, safety issues such as reduction of seismic capability during construction are at issue. Moreover, if the NRC, after the modification work is completed, does determine that a change made by the licensee did remove a margin of safety,

a new expensive and time consuming licensing proceeding may be required. 10 CFR 50.59(a)(2)(iii), 10 CFR 50.90.

E

The Accelerated Reporting Under 10 CFR 50.59(b)  
Proposed By Oregon Would Protect the Public Health and  
Safety and Would Not Be an Undue Burden on the Licensee

Oregon in its proposed findings of fact and conclusions of law asked that the licensee be required to make accelerated reports of design changes as provided by 10 CFR 50.59(b) supra, which allows for shorter intervals of reporting. Additionally, Oregon asks that a copy of any reports be sent directly by the licensee to the NRC's office of Nuclear Reactor Regulation in which the NRC staff experts who participated in this proceeding are located. Oregon did not ask that the NRC staff actually approve in advance proposed changes in the belief that with timely receipt of the licensee's changes, the NRC staff could conduct a meaningful review and that adequate means of immediate enforcement would then exist.

The accelerated reporting proposed by Oregon would alleviate the risk to the public health and safety noted above. The appropriate NRC staff experts would have the opportunity to review the safety determinations made by the licensee before changes in the modification were implemented.

Finally, contrary to the Licensing Board's conclusion in its September 4 order, Oregon cannot understand how accelerated reporting could be a burden on the licensee. The determinations required by 10 CFR 50.59(a) must be made in advance of any

change. The burden on the licensee is merely to transmit copies of its already required reports and documentation on an accelerated basis to the appropriate NRC staff. Construction would not be interrupted unless the NRC staff believed that a change did, in fact, present a safety issue which should be further examined. Moreover, the licensee's risk of a determination by the NRC staff after completion of construction that a safety violation had occurred would be reduced.

Thus, accelerated reporting of licensee's design changes as authorized under 10 CFR 50.59(b) would increase the protection of the public health and safety by providing meaningful, timely review by the appropriate NRC staff experts of the safety impact of the licensee's changes in the modifications approved by the Licensing Board.

#### IV

#### OREGON'S EXCEPTIONS NO. 6 AND 8

In its September 4 Order the Licensing Board concludes that Oregon had never presented an issue or suggestion of a contention as to accelerated reporting and that there had been no showing of Oregon of any reason to submit evaluations of changes in the modifications to the NRC staff. September 4 Order pp. 3 and 4. Although Oregon did not provide direct testimony on the issue or raise a contention, there is no requirement that it should have done so. 10 CFR 2.715(c)

Oregon did repeatedly cross-examine on the subject and clearly brought its concern to the Licensing Board's attention.

See eg. TR 4619-4628. As noted above, there is substantial evidence in the record showing the need for accelerated reporting. Oregon also filed proposed findings of fact and conclusions of law supported by a memorandum of points and authorities. Both the NRC staff and the licensee provided the Licensing Board with written responses and argument on Oregon's proposals. In any event, that evidence may be adduced by cross-examination is well established. Maine Yankee Atomic Power Company (Maine Yankee) ALAB 161, 6 AEC 1003, 1013-1019 (1973).

The Board's conclusion is, thus, incorrect.

V

#### CONCLUSION

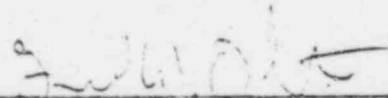
For all of the above reasons the initial decision of the Licensing Board should be modified to include the accelerated reporting requirements proposed by the State of Oregon.

VI

#### REQUEST FOR ORAL ARGUMENT

Pursuant to 10 CFR 2.763, Oregon requests that the Appeal Board panel hold oral argument on its exceptions.

Respectfully submitted,

  
\_\_\_\_\_  
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1. The qualifications of the staff, licensee and Oregon's experts are set forth in their direct testimony and are not in question.

2. Sec. 50.59 Changes, tests and experiments -

(a) (1) The holder of a license authorizing operation of a production or utilization facility may (i) make changes in the facility as described in the safety analysis report, (ii) make changes in the procedures as described in the safety analysis report, and (iii) conduct tests or experiments not described in the safety analysis report, without prior Commission approval, unless the proposed change, test or experiment involves a change in the technical specifications incorporated in the license or an unreviewed safety question. (2) A proposed change, test or experiment shall be deemed to involve an unreviewed safety question (i) if the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the safety analysis report may be increased; or (ii) if a possibility for an accident or malfunction of a different type than any evaluated previously in the safety analysis report may be created; or (iii) if the margin of safety as defined in the basis for any technical specification is reduced.

(b) The licensee shall maintain records of changes in the facility and of changes in the procedures made pursuant to this section, to the extent that such changes constitute changes in the facility as described in the safety analysis report or constitute changes in procedures as described in the safety analysis report. The licensee shall also maintain records of tests and experiments carried out pursuant to paragraph (a) of this section. These records shall include a written safety evaluation which provides the bases for the determination that the change, test, or experiment does not involve an unreviewed safety question. The licensee shall furnish to the appropriate NRC Regional Office shown in Appendix D of Part 20 of this chapter with a copy to the Director of Inspection and Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20535, annually or at such shorter intervals as may be specified in the license, a report containing a brief description of such changes, tests, and experiments, including a summary of the safety evaluations of each.

[emphasis supplied]

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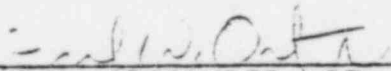
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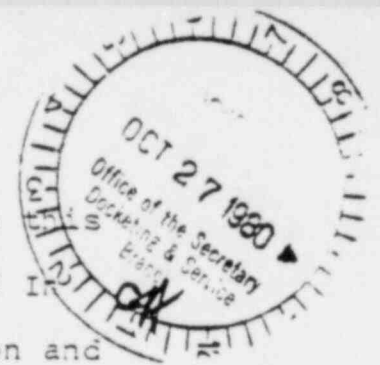
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CERTIFICATE OF SERVICE

I Frank W. Ostrander, Jr. hereby certify that on 22th day of October, 1980 I served the within "Brief In Support of Amended Exceptions To The Initial Decision and Order Regarding Motion By State of Oregon For Reconsideration of Initial Decision" upon the following parties of record by then deposition in the United States Post Office at Portland, Oregon, full, true and correct copies thereof, addressed to the said parties of record at the following addresses listed below, and prepaying the postage thereon:



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