

Thus, since at least 1975, PGE has known that it would likely be required to significantly reduce the approximately 15,000 tons of sulfur dioxide pollution that Boardman emits every year. PGE began operating the Boardman plant in the early 1980's, and for the first seventeen years of the plant's life, the plant's capacity was around 540 megawatts. The Boardman plant was designed with additional auxiliary steam capacity that PGE intended to use to reheat the flue gas after it passed through the anticipated sulfur dioxide scrubber – as required by the original site certification agreement. For those first seventeen years, that auxiliary steam was not used.

At every turn during those seventeen years, however, PGE worked politically to avoid the installation of the very controls that it was warned would be required. In July 1981, PGE wrote the Environmental Quality Commission (EQC) to explain why, in the company's view, PGE Boardman should be included in the "Baseline" concentration for purposes of the New Source Review program. PGE stated that Boardman should be included in the "Baseline" because if it was not, "PGE's ratepayers may be required eventually to spend over \$60 million on additional pollution control equipment for Unit 1." To avoid having to put on this pollution control equipment, PGE asked the Environmental Quality Commission to write specific language into their rules to get PGE the result it wants because PGE "is in no position to convince EPA to revise its New Source Review definition or even to give PGE a favorable clarification of such definitions." See 1981 Letter from PGE to EQC (attached as Exhibit 3). PGE narrowly escaped the requirement to spend \$60 million on pollution control equipment through regulatory sleight of hand.

Ten years later, in March 1991, PGE CEO Peggy Fowler wrote the EPA Administrator asking the PGE receive special treatment under the Title IV Acid Rain Program – a program that would have required PGE to install a sulfur dioxide scrubber on Boardman. PGE argued that it would be too expensive because the cost to retrofit a scrubber would be "at least \$100 million." See March 21, 1991 Letter from Peggy Fowler to EPA, page 4 (attached as Exhibit 4).

In 1999, Boardman's capacity jumped to 550 megawatts. Capacity reached 585 megawatts in 2001, and rose to 615 megawatts in 2005. This increase in capacity is related to the additional steam capacity that Oregon regulators intended would be used to make installation and operation of a sulfur dioxide scrubber easier and cheaper. To fix this "problem," PGE added "surface area," that is, new sections of tubing, to various components of the Boardman boiler. PGE made these boiler changes in conjunction with changes to its turbine, and all of these changes together allowed PGE to transform Boardman from a 540 megawatt plant to the 615/618 megawatt plant it is today.

This history reveals that the utility knew that it would one day have to install sulfur dioxide pollution control equipment, but instead of making investments in pollution controls, PGE invested in increasing the electric generating capacity of plant by at least 75 megawatts. In some ways, PGE's strategy was too successful, and now the utility has put off the installation of required sulfur dioxide controls too long for its own good. Today, the world is acutely aware of the climate crisis we face, and the overwhelming contribution to that crisis of coal-fired power plants. In the face of this crisis, investing the \$280,000,000 – \$320,000,000 necessary to comply with sulfur dioxide reductions required by BART, EPA's recent Notice of Violation, the Clean Air Act programs at issue in *Sierra Club, et al., v. Portland General Electric*, and new standards

for air toxics from power plants, is an imprudent choice for ratepayers, and does not constitute the least-cost option.

We agree with Staff that it is inappropriate for the Commission to acknowledge those investments. In fact, perhaps the only clear directive of all of the analysis done by PGE and Intervenors over the course of this docket is that the half-billion dollar price tag for full compliance with the Clean Air Act over the next decades is the most costly, and most risky, option for ratepayers.

We disagree, however, with Staff's recommended alternative and consideration of other available alternatives. Clearly, nothing will be as cheap for the utility and ratepayers as continuing to operate the plant without pollution controls and without significant carbon regulation. That is precisely why PGE has tried to avoid compliance with Clean Air Act programs that require the installation of pollution controls. We want to make clear, however, that non-compliance is no longer an option for PGE. As stated above, in addition to future carbon regulation, PGE faces pollution reduction requirements through not only the BART rule, but also, EPA's recent Notice of Violation, the Clean Air Act programs at issue in *Sierra Club, et al., v. Portland General Electric*, and new standards for air toxics from power plants.

Therefore, the goal in this IRP should be to establish the least-cost method of compliance with existing Clean Air Act regulations at PGE Boardman, and the least-risk plan for managing the significant unknowns lying ahead for coal-fired power plants. We disagree with Staff's assertion that closure by the end 2015/early 2016 is too risky for further consideration. We, the Northwest Energy Coalition, the Northwest & Intermountain Power Producers Coalition, and others have presented detailed information demonstrating that closure in 2015/16 is a low cost option, and that ample replacement power is available in the region to transition the Boardman coal plant to other sources by this time. The Sierra Club and others believe that PGE exaggerated its resources needs in 2015, natural gas prices, and long-term load forecasts in order to remove this early closure option from consideration.

As the Final Order is developed, we urge you to reassess the 2015/16 closure option and acknowledge it. The same array of regulatory pressures facing PGE that have made burning coal at Boardman until 2040 so unlikely that it should be removed from consideration as a backstop are the same regulatory pressures make it far more likely that the plant will in fact be required to close by late 2015/16. A 2015/16 closure date is in reality the date most likely to harmonize with all of the regulatory programs at issue in the BART rule, EPA's recent Notice of Violation, the Clean Air Act programs at issue in *Sierra Club, et al., v. Portland General Electric*, and new standards for air toxics from power plants. Dismissing the 2015/16 closure option will discard the flexibility necessary to respond to those regulatory requirements, and thereby increase the risks posed by them. Rather than dismiss 2015/16 as PUC Staff have recommended, the PUC should accept that closure in 2015/16 as a very likely reality, and in fact more likely than indefinite operation of the plant, and thus acknowledge 2015/16 closure.

Similarly, DEQ's 2018 shutdown option, or a substantially similar option, could provide significant benefits to ratepayers while allowing PGE to comply with BART rule, and develop acceptable compromise resolutions of EPA's recent Notice of Violation, the Clean Air Act

programs at issue in *Sierra Club, et al., v. Portland General Electric*, and new standards for air toxics from power plants. PGE has suggested that DEQ's Option 2 (closure in 2018) would require the installation of more pollution control infrastructure than what DEQ believes is the case. In matters of pollution controls necessary to meet environmental requirements, we would respectfully ask the PUC to defer to the expertise of agencies such as the DEQ and EPA, and not PGE. The DEQ's cost estimates on pollution controls required for closure in 2018 are far more reliable than PGE's assertions and are similar to the costs associated with PGE's BART III plan which PUC Staff recommends the Commission acknowledge. While PUC staff may currently 'prefer BART III,' it would be irresponsible to solely acknowledge this option without a careful analysis and discussion of DEQ's Option 2, or a substantially similar option, with closure in 2018. We can find no such discussion in PUC Staff's Recommendations and Draft Proposed Order.

Further, the PUC should reconsider Staff's recommendation for acknowledgement of PGE's BART III proposal. In letters to the DEQ dated October 22, PGE is already advocating something different than BART III and has successfully petitioned the agency to reopen the public record for consideration of new proposal 'modeled on DEQ's proposed option 2' (DEQ Rulemaking Announcement, October 29, 2010) While PGE's latest proposal would appear to retain a closure date no later than December 31, 2020, it proposes an alternative pollution control regime not envisioned in BART III, and which may prove to be more costly for the company. Further, DEQ may yet modify this or other early closure options further before forwarding a final recommendation to the EQC to consider for adoption.

In conclusion, PUC should specifically acknowledge the investments required by DEQ's Option 3 (2015/16 closure) and Option 2 (2018 closure). At a minimum, given the lack of discussion of DEQ's Option 2 in the Proposed Draft Order, the PUC should clarify its position on DEQ's Option 2 and acknowledge it as low cost, low risk option for the company. Since the final resolution before the DEQ, EQC, and EPA continues to be a moving target, it would be prudent for the PUC at this time to provide PGE a clearer picture of a range of acknowledged options, not limiting itself to BART III, which appears to no longer be a viable option from either PGE or DEQ's perspective.

Dated this 29th day of October 2010.

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Certificate of Service

I certify that I have this day served the foregoing Intervenor Comments upon all parties of record in LC 48 by delivering a copy by electronic mail or by U.S. Mail to all parties as indicated on the service list compiled by the OPUC and attached hereto.

Dated this 29th day of October 2010.

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**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

LC 48

In the Matter of

PORTLAND GENERAL ELECTRIC

2009 Integrated Resource Plan

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SIERRA CLUB, COLUMBIA
RIVERKEEPER, FRIENDS OF
THE COLUMBIA GORGE, AND
THE NORTHWEST ENVIRONMENTAL
DEFENSE CENTER'S COMMENTS
ON STAFF'S PROPOSED ORDER and
REPLY TO PGE'S RESPONSE TO
COMMISSION BENCH REQUEST

Exhibit 1

BEFORE THE NUCLEAR AND THERMAL
ENERGY COUNCIL

In the matter of the Application)
of Portland General Electric)
Company for a Site Certificate)
for the Boardman Power Plants)

Staff's Brief on Draft
Site Certification Agree-
ment

Dated December 2, 1974

STAFF'S BRIEF ON
BOARDMAN SITE CERTIFICATION AGREEMENT

INTRODUCTION

On October 31, 1974, following the Boardman hearings, staff and PGE submitted initial Findings of Fact, Conclusions of Law and draft Site Certification Agreements reflecting their respective positions. Realizing the possibility for confusion inherent in presenting their positions in this manner, staff and PGE held three conferences. These resulted in one draft Site Certification Agreement, containing clauses agreed upon by staff and PGE, and optional clauses where agreement could not be reached.

Staff wants to emphasize that the staff's agreement with PGE on various portions of the Site Certification is in no way binding upon the Council. Copies of the initial positions taken by staff and PGE have also been sent to the Council.

The conferences tended to resolve differences in language which, in staff's opinion, were either not controversial or not substantive. With one exception, therefore, the following brief is intended to support staff's position on controversial, substantive conditions where agreement could not be reached. The exception concerns portions of the draft Site Certification Agreement dealing with air quality impacts of the Boardman Coal Plant.

The draft Site Certification Agreement originally proposed by staff and PGE included major differences regarding air quality conditions which should be imposed on the coal-fired plant. During the subsequent conferences staff and PGE were able to develop an agreeable compromise set of conditions. However, the staff believes that one fundamental underlying air-quality issue -- non-degradation of existing ambient air quality in the region of the site -- is so important that alternative courses of action available to the Council should be set out fully. Moreover, subsequent to PGE and staff development of the compromise set of conditions, further discussion with DEQ staff has identified other potential approaches to the air quality issue that should be given careful consideration.

Finally, staff and PGE have not attempted to resolve differences in their Findings of Fact and Conclusions of Law. Staff submits that its Proposed Findings of Fact, Findings of Ultimate Fact and Conclusions of Law, while lengthy and detailed, are consistent with the record, support staff's proposed Site Certification Agreement, and are responsive to the statutory requirements of the Council's enabling legislation.

PRECLUDING PERMANENT RESIDENCES (p. 7, Item IV.B.5.)

PGE's option requires PGE and the State to use powers available to them to limit the total number and density of residences within 3200 meters of the nuclear plants such that

"there is reasonable probability that appropriate protection measures could be taken in their behalf in the event of a serious accident." Staff's option covers the entire area shown on Exhibit 1 to the site certification as under PGE's control, and requires that there be no permanent residences in this area.

PGE stated during the hearings that they planned to acquire the right to control all activities on the site (Tr. 121). Staff believes it to be reasonable and prudent to require PGE to preclude permanent residences on land at the site which is under their control. There are presently no permanent residences in this area.

Staff believes PGE's proposal is deficient in two respects. First, it is not clear what constitutes "appropriate protective measures" and how the development of the area should be controlled. Second, it is practicable to preclude permanent residences in the area under PGE control, and this area could be affected in the event of a plant accident.

A related issue for future consideration is the question of whether land use planning should be modified in the area beyond the property under utility control. No guidelines have been developed for this to date, however.

USE OF PLUTONIUM-ENRICHED FUELS (p. 9, Item IV.D.2.)

Staff's option would require PGE to secure an amendment of its site certificate before using plutonium-enriched fuels in either of the Boardman Nuclear Plants. PGE objects to the

inclusion of any clause on this subject.

Staff pointed out in its findings that "PGE represented that the nuclear plants would be fueled with slightly enriched uranium dioxide, and the staff conducted its review on the basis of that representation. (Ex. A-1, p. 3-3; Ex. S-1, p. 21) At the hearing PGE stated it was considering the use of plutonium recycle fuel. (Tr. 201) The basic issue regarding the use of plutonium-enriched fuels is the adequacy of protective measures against diversion or theft of a material susceptible of being manufactured into a clandestine nuclear weapon. (Ex. S-1, p. 21) This issue was not addressed by PGE during the course of these proceedings. Grave concern has been expressed recently regarding the adequacy of present procedures for safeguarding nuclear power plants against sabotage or enemy attack. (Ex. S-1, Attach. 4, Tr. 390)."

Considering the potential hazards, present regulatory uncertainties, and the state of the record, staff believes its suggested condition is appropriate.

Apparently, it is PGE's position that the federal Atomic Energy Act pre-empts the state from imposing this condition. Staff disagrees for the following reasons:

(1) The condition is necessitated by PGE's statements on the potential use of the fuel. Staff reviewed PGE's application based, in some significant part, on PGE's dominant representations that uranium dioxide would constitute the fuel. By staff's proposed condition, the Council is simply holding

PGE to its representations. Therefore, no pre-emption issue exists.

(2) Even assuming a potential pre-emption issue did exist, the doctrine would not preclude staff's proposed condition. It is clear under the case of Northern States Power Company v. Minnesota (1971) 447 F2d 1143, that the Council cannot regulate the use of plutonium fuel insofar as its use results in the discharge of radioactive effluents. However the use of such fuel raises questions involving transportation, storage, waste disposal, safeguards and even power reliability. As to these areas, the state is not pre-empted. Therefore, the condition is legally appropriate.

AIR QUALITY ASPECTS OF COAL-FIRED PLANT (p. 12, Sec. IV.E.)

A fundamental, and unavoidable, issue surrounding approval of the Boardman Coal Plant can be captioned, perhaps unfortunately, as "nondegradation." Stated simply, the issue is as follows -- to what extent, if any, may the construction and operation of a col-fired plant at Boardman be permitted to adversely impact existing ambient air quality? For the reasons discussed below, the staff believes that under the existing state of the law, the Council should exercise its judgment so that the air quality impacts of the Boardman Coal Plant are held as close to zero as practicable.

State and Federal Law

To consider this matter a basic understanding of the history of the "nondegradation" issue is needed. The Federal

Air Quality Act of 1967 had as one of its purposes:

" * * * to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population." 42 U.S.C. § 1857(b)(1)

The legislative history confirms that the "protect and enhance" language, readopted without change in the Clean Air Act Amendments of 1970, incorporated a policy of nondegradation into that statute. For example, the Senate report accompanying the 1970 amendment states:

"In areas where current air pollution levels are already equal to, or better than, the air quality goals, the Secretary should not approve any implementation plan which does not provide, to the maximum extent practicable, for the continued maintenance of such ambient air quality. Once such national goals are established, deterioration of air quality should not be permitted except under circumstances where there is no available alternative. Given the various alternative means of preventing and controlling air pollution--including the use of the best available control technology, industrial processes, and operating practices--and care in the selection of sites for new sources, land use planning and traffic control--deterioration need not occur." S. REP. NO. 91-1196, 91st Cong., 2nd Sess. (1970).

In 1970, the Department of Health, Education and Welfare administered the Air Quality Act of 1967. Both its Secretary and Under-Secretary testified during the hearings on the 1970 amendments that they interpreted the words "protect and enhance" to mean nondegradation.

The Environmental Protection Agency ("E.P.A.") proposed guidelines for implementing the Clean Air Act Amendments of 1970 which did not require states to guard against deterioration of quality presently better than the national secondary standards.

Prior to their effective date, the Sierra Club sued to enjoin issuance of the implementation guidelines on the ground that, by failing to protect against "significant deterioration," the guidelines violated the Clean Air Act Amendments of 1970. In Sierra Club v. Ruckelshaus (D.D.C. 1972) 344 F Supp 253, the Federal District Court ruled in favor of the Sierra Club stating:

"Having considered the stated purpose of the Clean Air Act of 1970, the legislative history of the Act and its predecessors and the past and present administrative interpretations of the Act, it is our judgment that the Clean Air Act of 1970 is based in important part on a policy of non-degradation of existing clean air and that 40 C.F.R. 51.12(b), in permitting the states to submit plans which allow pollution levels of clean air to rise to the secondary standard level of pollution, is contrary to the legislative policy of the Act and is, therefore, invalid." 344 F Supp at 256.

The District Court's order enjoined the administrator of the E.P.A. from:

" * * * approving any state implementation plan under 42 U.S.C. 1875c-5 unless he approves the State plan subject to subsequent review by him to insure that it does not permit significant deterioration of existing air quality in any portion of any state where the existing air quality is better than one or more of secondary standards promulgated by the administrator." Preliminary Injunction dated May 30, 1972, cited in The Clean Air Act and the Concept of Non-Degradation: Sierra Club v. Ruckelshaus, 2 ECOLOGY LAW QUARTERLY 801 at 806 (1972).

At the request of E.P.A., the United States Supreme Court granted certiorari to review the District Court decision. An equally divided (four to four) Court affirmed the District Court's decision without opinion. Fri v. Sierra Club, 412 U.S. 541, 93 Sup. Ct. 277, 37 Law. Ed. 2d 140 (1973). The congressional mandate of non-degradation has received judicial sanction elsewhere.

See National Resources Defense Council, Inc. v. Environmental Protection Agency (5th Circuit, 1974) 489 F 2nd 390, 408.

On November 11, 1972, the E.P.A. disapproved all state implementation plans insofar as they failed to provide for prevention of "significant deterioration." 37 Federal Register 23836.

The E.P.A. proposed rules on this subject on July 16, 1973.

38 Federal Register 18986. Those rules were never adopted. On

August 27, 1974, E.P.A. again proposed a set of rules for comment (39 Federal Register 3100), with a comment deadline of

September 26, 1974. Rules were adopted by E.P.A. the week of November 25, 1974. The Sierra Club took immediate action seeking a judicial determination of whether the rules complied with prior court orders. See WALL STREET JOURNAL, Nov. 29, 1974.

Staff and D.E.Q. are presently in the process of obtaining and reviewing these rules.

Under the Federal Clean Air Act, a state is free to adopt its own air quality regulations, so long as they are not less stringent than those of the federal government. 42 U.S.C. § 1957d-1. Oregon statutes, and administrative rules adopted thereunder, indicate that it is the state's policy, as well as that of the federal government, to take a serious position in favor of non-degradation. For example, under ORS 468.280, it is the policy of the state "to restore and maintain the quality of the air resources of the state in a condition as free from air pollution as practicable, consistent with the overall public welfare of the state." (Emphasis added) The rules of the Department of Environmental Quality would indicate that the agency interprets ORS 468.280 as including a policy of non-degradation.

"The highest and best practicable treatment and control of air contaminate emission shall in every case be provided so as to maintain overall air quality at the highest possible levels, and to maintain contaminate concentrations, visibility reduction, odors, soiling and other deleterious factors at the lowest possible levels. In the case of new sources of air contamination, particularly those located in areas with existing high air quality, the degree of treatment and control provided shall be such that degradation of existing air quality is minimized to the greatest extent possible." OAR 340-20-001 (Emphasis added).

The Department of Environmental Quality has not yet adopted rules specifically defining what would constitute "significant deterioration" of clean air. Its intention of doing so was announced at a meeting of the Environmental Quality Commission on Friday, November 22, 1974. Thus:

(1) The Federal Clean Air Act as presently written prohibits "significant deterioration of air quality in regions where that air quality is better than the national secondary ambience standards."

(2) The state is free to satisfy that obligation as it sees fit, absent specific federal guidelines. Even if federal guidelines exist, Oregon is free to adopt more stringent standards.

Significance of the Issue

Under its governing statutes, the Council itself must make the ultimate decision of the non-degradation issue

The Council must determine how the Boardman Coal Plant can be constructed and operation "in a manner consistent with protection to the public health and safety and in compliance with the air, water and other environmental protection policies" of Oregon. ORS 453.315.

The staff does not recommend that the Boardman Coal Plant application be denied. A need exists for the power it will provide. However, staff feels compelled to put this issue of non-degradation clearly before the Council. It is one of the most significant issues in this proceeding, and its resolution may have heavy precedential value applicable in other situations where economic and environmental values must be harmonized.

The staff believes that the obligation to prevent "significant deterioration" should be satisfied by imposing site certificate conditions which will insure impact of the plant on ambient air quality is so low as to be negligible. The staff has concluded that this is appropriate as a result of applying the current state of the law to the situation confronting it. Two principal pollutants which will be emitted by the plant, sulfur oxides and nitrogen oxides, are virtually non-existent at Boardman at the present time. Particulate pollution does exist in the form of windblown dust. In terms of man-made pollution, however, the existing ambient air quality at Boardman is clearly better than the secondary levels described by E.P.A. The Boardman coal plant will, assuming a .5% sulfur content of coal burned and a 6% ash content, generate about 15,000 tons of sulfur per year and about 180,000 tons of ash per year. In the absence of pollution control equipment, a large fraction of this material would be released to the ambient air in the form of sulfur dioxide and fly ash.

It must be recognized that under a "non-degradation" policy, it is not permissible to allow pollutant concentrations to rise to the national secondary standards, even though such standards are designed to protect the "public welfare." This is evident from the legislative history to the 1970 Clean Air Act Amendments.

The impetus provided by federal and state legislation is reinforced by several practical considerations:

(1) The Council must consider very carefully the impact of the proposed plan on air quality in view of the binding and final nature of the certification agreement. P.G.E.'s proposed warranted completion date for the Boardman Coal-Fired Plant is August, 1985 (Tr. 176). The useful operating life of the plant may be up to 35 years (Tr. 292). Therefore, the proposed plant may be in operation until 2020. The Council's enabling statutes provide that once a signed certificate is issued, stricter rules may be imposed only "upon a clear showing that there is danger to public health or safety * * *" .ORS 453.395(3). There is no provision for imposition of stricter rules in the event of danger to public welfare, although consideration of public welfare is a fundamental element in efforts to control air pollution. Thus, in a sense, the Council may be imposing standards and conditions now which will have to be appropriate for the next 45 years.

(2) The Boardman Coal Plant will be the first large pollution emitter in a "clean" air region. It is not unreasonable

to assume that residential, commercial, and industrial growth will flow from the completion of this project. All subsequent development has the potential of adding additional increments of pollution to the regional air. The goal is to avoid ultimate "significant deterioration" of the air quality on the Boardman region. Unless stringent limitations are put on the extent to which the Boardman Coal Plant impacts upon regional air quality, subsequent development in the area may be hampered or even precluded. Thus, it is reasonable to take a conservative approach as to this particular project.

Arguments for Other Interpretations of the Clean Air Act

Before turning to a discussion of the various options for dealing with the non-degradation requirements suggested by staff and P.G.E., staff would like to discuss briefly a few of the more impressive arguments traditionally advanced to avoid a very liberal interpretation of the Clean Air Act's requirements.

(1) Economic impact of stringent controls

It is often argued that the capital and operating costs of control equipment, and the resulting impact upon electricity rates (and upon classes of electricity users) support a "soft" view of the non-degradation issue. Two facts militate against the success of this argument in this case:

- (a) Even though it had an opportunity to do so, P.G.E. failed to provide any specific information to the Council on the cost of environmental pro-

tection. Initially, P.G.E. did not address that portion of Rule 25-045(1)(c), which requires an applicant to discuss the investment and annual expense of equipment installed to protect the environment. When it was requested to do so in a Workshop, P.G.E. responded with only the most general information on the subject.

(b) More significantly, this particular concern was addressed and resolved in the 1970 amendments to the Clean Air Act. The legislative history reveals a Congressional awareness that pursuing a policy of non-degradation would have significant economic consequences. For example, after the 1970 amendments returned from conference, Senator Cooper stated:

"The Bill * * * will place great burdens on industry, it will place great burdens on government, both at the state and federal level, and it will place great burdens on the people generally for they will ultimately have to bear the expense and, for the first time, possibly experience inconvenience so that we might achieve clean and healthful air." 116 Cong. Record 42,394 (1970).

The Senate-House conference on the 1970 amendments actually eliminated phrases concerning "economic feasibility" and "cost-effectiveness analyses" in all discussions except those dealing with the "New Source Performance Standards." See 2 ECOLOGY LAW QUARTERLY 801 at 827-828.

(2) Significance of "New Source Performance Standards"

In amending the Clean Air Act in 1970, Congress required the E.P.A. to develop emission standards for newly-constructed sources of pollution. The E.P.A. has adopted such standards. P.G.E. maintains that the Boardman Coal Plant will comply with these standards and therefore may argue that one should not ask for anything more. However, Congress did ask for more. The "New Source Performance Standards" are not a solution to the goal of preventing significant deterioration of existing clean air. This is apparent for three reasons:

(a) New source standards apply individually to each new pollution emitter in a "clean" air region. Thus, even if each single source complied with the standards, in the aggregate it is all too probable that "significant deterioration" will occur.

(b) Because they require only the use of control equipment which is presently available in factory production, the new source standards tend to dampen progress in the development of new control techniques. See "The Clean Air Act and the Concept of Non-Degradation: Sierra Club v. Ruckelshaus"
2 ECOLOGY LAW QUARTERLY 801 at 815 to 818 (1972).

(c) Finally, the new source standards are written in terms of pounds of various pollutants emitted per amounts of fuel burned. There is no upper limit

to the amounts of pollutants emitted, even from a single facility. "Significant deterioration" is obviously affected by the total amount of various pollutants which are emitted.

Air quality consideration should not be used to accomplish zoning

This is an argument advanced by many, including the E.P.A., against treating "non-degradation" literally. But the appeal of the argument isn't applicable to this situation. Unless non-degradation is taken as close to literally as possible here, the Council may in effect "zone" the Boardman area in a manner which severely restricts additional industrial development. This would be the result if "too much" of the difference between existing ambient air quality and the national secondary levels is assigned to the Boardman Coal Plant.

Discussion of Specific Air Quality Conditions

Site certificate conditions relating to air quality control may be grouped into four (4) general categories:

1. Fuel restrictions
2. Emission limits
3. Requirements for application of specific types of emission controls
4. Ambient air quality degradation limits

These items are interrelated, but it is helpful to discuss them individually.

(1) Fuel Restrictions

Staff is proposing a coal-sulfur content restriction of 1% sulfur by weight for the proposed plant. This

limit is consistent with the D.E.Q. rule (OAR 340-22-020) setting 1% by weight as the maximum sulfur content of coal sold, distributed or used in Oregon.

During the hearings, P.G.E. said that a contract for supply of coal by rail from southern Wyoming was in the final stages of negotiation and that this coal would be lower in sulfur than coal identified in the site certificate application as "Rock Springs"; that is, lower than 0.52% sulfur (Tr. p. 293, Ex. A-1 Table 15-1).

However, since the hearing the staff has been given to understand that the contract discussed in the hearing will not be executed and, instead, P.G.E. is considering several other potential coal sources. Thus, the coal composition cannot be presently identified.

Other potential alternative wording for the coal sulfur content requirement includes:

(a) A limit which would tie sulfur content to heating value. There is a technical rationale for such a limit since both parameters affect potential emission from the plant; for example, there may be no net benefit from certain low sulfur coals if because of heating value, a great deal of coal must be burned to generate the same amount of power. It would be possible to impose a limit such as "sulfur content per pound of coal shall not be greater than .00054 times the heat content of the coal in thousands of btu's per pound."

(This corresponds to the proposed sulfur dioxide emission limit, assuming 10% of the sulfur is retained in the ash.)

(b) A limit on sulfur content of some value less than 1%. At one point the staff was considering a limit of 0.6% based on the presumption that "Rock Springs" type coal would be used. However, with the source of coal now uncertain, PGE has opposed a limit which might restrict their potential coal supply options.

(2) Emission Limits

The limits proposed in the draft site certification agreements are the present standards contained in Federal Environmental Protection Agency and Oregon Department of Environmental Quality regulations. In at least two cases, there is a rationale for imposition of more restrictive standards, as follows:

(a) A more restrictive limit on sulfur dioxide emissions. In at least two states (Nevada and New Mexico) emission limits have been adopted which are lower than the EPA/Oregon DEQ regulations (Ex. S-3, p. 9, Tr. 285-287). For example, New Mexico Air Quality Control Regulation No. 602 limits sulfur dioxide emissions to 0.34 pounds per million btu heat input (versus the E.P.A. standard of 1.2 lbs. per million btu).

An argument can be made that such emission limits are achievable; and, therefore, consistent with requirements to utilize highest and best treatment and prevent degradation of ambient air quality, and such limits should be imposed.

(b) A more restrictive limit on particulate matter emissions. The present state-of-the art in particulate material removal should permit removal of at least 99.5% of the particulate material in stack gasses (Ex. S-3, p. 15). Considering this efficiency and the ash content of typical western coals, it may be possible to limit particulate material emissions to approximately half the amount permitted by the draft site certification agreement; that is, 0.05 rather than 0.10 lbs/million btu heat input.

(3) Application of Specific Types of Emission Controls

(a) Sulfur Dioxide

The most controversial matter in this area is the possible application of sulfur dioxide emission control equipment to the proposed plant. P.G.E. presently plans to rely exclusively on the use of low sulfur coal to hold sulfur oxide emissions in gaseous effluents within E.P.A.'s secondary levels (Tr. 277). However, P.G.E. has expressed a commitment to meet future more stringent standards imposed by D.E.Q. or E.P.A. (Tr. 316).

Several power plants are being constructed or operated elsewhere in the country which use low sulfur coal (less than 1% sulfur) and also utilize stack gas sulfur oxide removal systems (Tr. 286-287). There is presently a disagreement between the Environmental Protection Agency and several utilities regarding the status of flue gas desulfurization processes. E.P.A. says, for example, in a September 1974 document entitled "Flue Gas Desulfurization Installations and Operations" that:

"Flue gas desulfurization systems are available and can be used to continuously, reliably and effectively control sulfur oxide emissions from power plants."

American Electric Power System disagrees with this conclusions. In an October 21, 1974 TIME magazine advertisement they state that E.P.A's studies have:

"* * * failed to demonstrate the degree of reliability necessary for electric utility use."

AEP goes on to say:

"And yet, to this day, EPA insists these monstrous contraptions are available, work, are reliable * * * and electric utilities should invest many billions of dollars in them.

"If that isn't fanning the fires of inflation, wasting precious assets and wrongfully burdening the electric costs of the American people, then we shouldn't be allowed to generate another kilowatt."

(b) Particulate Material

As previously noted, the record contains information indicating that the present state-of-the-art permits 99.5% or better removal efficiencies for particulate material. It is difficult to translate this into a specific emission standard, not knowing the coal supply for the proposed plant. However, the site certificate could require such removal efficiency as representing the highest and best practicable treatment.

(4) Ambient Air Quality Degradation Limits

Both E.P.A. and D.E.Q. have adopted standards establishing maximum acceptable concentrations of pollutants in ambient air.

In considering the Boardman Coal-Fired Plant the staff has concluded that ambient air quality degradation resulting from plant operations should be limited to an amount that is so low as to be negligible. Staff has chosen 10% of the D.E.Q. standards as an amount that would be negligible. There are obviously arguments that this limit should be higher or lower, or phrased in different terms.

Alternative Council Action

In addition to the set of conditions contained in the draft site certification agreement, staff recommends the Council give careful consideration to the following alternative approaches:

(1) The application could be denied pending identification of the coal supply, and calculation of the actual environmental emissions and impacts based on the coal to be used. Subsequent to both the hearing and staff's conferences with P.G.E., D.E.Q. staff members pointed out that decisions relating to air quality controls for a facility are extremely difficult when the composition of the fuel, and thus the nature, amount, and composition of the stack gasses are not precisely known. The staff agrees with this observation.

(2) The application could be granted, with the suggested 10% ambient air quality degradation limits, plus the condition that sulfur dioxide removal equipment and 99.5% efficient or better particulate material removal equipment be installed unless P.G.E. could later make a clear showing that, based on the specific fuel to be used, such control measures would not be warranted. This, in effect, would be saying that these control measures, in the absence of more specific information on the coal supply, constitute application of the highest and best practicable treatment, and are necessary to insure ambient air quality is not degraded. The D.E.Q. staff has suggested this as a potential course of action, and the staff believes it to be reasonable and supported by the uncertainties regarding the coal plant contained in the record.

(3) The application could be granted subject to the existing Oregon D.E.Q. ambient air quality standards, the 1% maximum coal sulfur limit, the existing Oregon D. E. Q. emission standards, and the requirement for application of highest and best treatment. This would be, in the staff's opinion, a course which would not give adequate consideration to the non-degradation issue. Moreover, a more explicit definition of what constitutes highest and best practicable treatment should be made, in order to be fair to the applicant.

STATE WASTE DISCHARGE PERMIT (p. 30, Item IV.p.8.(d))

PGE maintains that a state waste discharge permit is not required. The staff's draft certification includes a requirement for such a permit.

Staff believes such a permit is required under D.E.Q. regulations (OAR 340-45-015(1)(b)), which require a permit to "construct, install or operate any disposal system * * *." Staff believes that Carty Reservoir, as a system to dispose of waste heat, and the sewage treatment system both are within the definition of "disposal system."

AMENDMENT FOR "WELFARE" REASONS (p. 33 and 34, Item V.)

P.G.E. agrees with the staff that Article V of the site certificate, authorizing amendments, is necessary. However, P. G. E. objects to the use of the term "welfare" in the Article. Staff believes there is no basis for such an objection in the law.

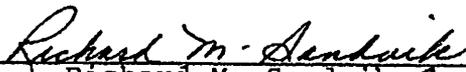
On the contrary, it is readily apparent that NTEC was to exercise its jurisdiction to protect the public welfare, as well as the public health and safety:

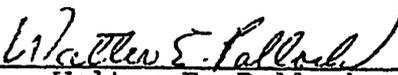
(1) The legislature declared it to be state policy that thermal power plant development "be accomplished in a manner consistent with protection to the public health and safety and in compliance with the air, water and other environmental policies of the state * * *."
ORS 453.315.

(2) ORS 453.515 (1) requires the Council to take the public health, safety and welfare into account in processing a site certificate application.

It is as conceivable that "future unforeseen developments" could pose a threat to the public welfare as they could to the public health and safety. Therefore, since the Council is charged by law to protect the public welfare, staff's version of Section V should be used.

Respectfully submitted:


Richard M. Sandvik *Prof*
Assistant Attorney General


Walter E. Pollock
Nuclear Engineer

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

LC 48

In the Matter of

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PORTLAND GENERAL ELECTRIC

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2009 Integrated Resource Plan

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SIERRA CLUB, COLUMBIA
RIVERKEEPER, FRIENDS OF
THE COLUMBIA GORGE, AND
THE NORTHWEST ENVIRONMENTAL
DEFENSE CENTER'S COMMENTS
ON STAFF'S PROPOSED ORDER and
REPLY TO PGE'S RESPONSE TO
COMMISSION BENCH REQUEST

Exhibit 2

PGE: AU
RCG RCH
~~UTB~~ UB
LLB ZZR
LEM EM
For your info
AJ

THERMAL POWER PLANT
SITE CERTIFICATION AGREEMENT

for the

BOARDMAN SITE

between

The State of Oregon

and

PORTLAND GENERAL ELECTRIC COMPANY

February 27, 1975

INDEX

NOTE: A site certificate holder is required to comply with rules of the Council in effect on the date of certification. For the reader's convenience, rules pertinent to performance by site certificate holders are attached as an Exhibit. The following index shows, parenthetically, rule numbers for subject matter covered in both the certificate and the rules.

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TIHERMAL POWER PLANT
SITE CERTIFICATION AGREEMENT

for the

BOARDMAN SITE

between

THE STATE OF OREGON

and

PORTLAND GENERAL ELECTRIC COMPANY

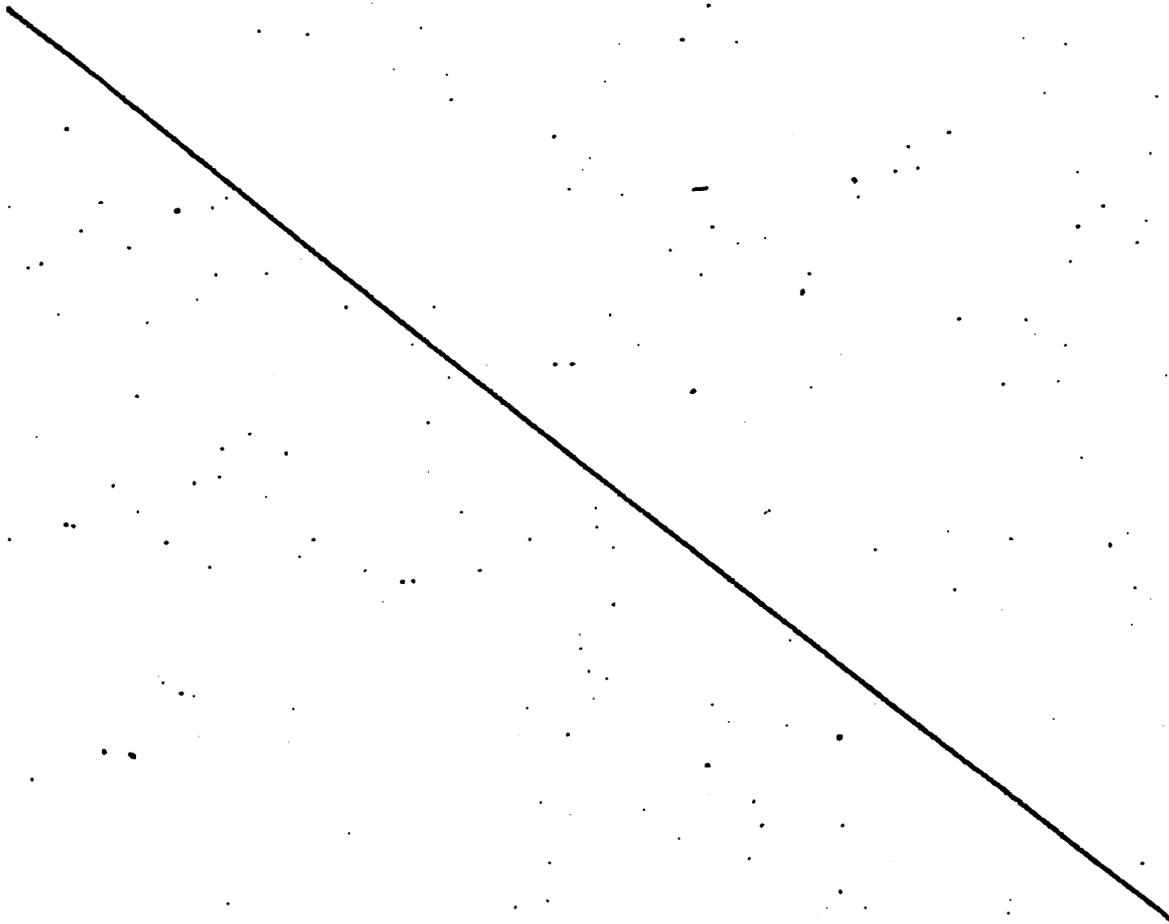
This Certification Agreement is made and entered into in the manner provided in ORS 453.305 to 453.575 and 453.994, by and between the State of Oregon, acting by and through the Governor of the State of Oregon (State) and Portland General Electric Company (PGE), and Oregon corporation.

I. SITE CERTIFICATION

This agreement certifies that, to the extent authorized by State law and those warranties and conditions set forth herein, the State approves the construction and operation of thermal power plants and associated facilities at the Boardman Site, in the manner described in PGE's site certificate application dated February 28, 1973, as amended, this agreement and the record of the administrative hearings held pursuant to ORS 453.305. This approval by the State binds the State and all counties, cities and political subdivisions in the State as to the approval of the site and the construction and operation of the plants or associated facilities, subject only to conditions of this agreement. Each agency that issues a permit, license, or certificate shall continue to exercise enforcement authority over such permit, license or certificate.

B. Any renewed or revised site certificate issued pursuant to section IV. L. shall require Portland General Electric Company to comply with applicable state laws as they exist on the date the renewed or revised site certificate is executed by the Governor, and with stricter state laws adopted subsequent thereto if compliance with such stricter state laws is necessary to avoid a clear danger to the public health and safety.

C. PGE, by executing this agreement, expressly waives any contest, jurisdictional or otherwise, as to the applicability of future state law pursuant to either Section I. B. above or Section IV. A. 1. below, except contests based upon violations of the Constitutions of the United States or the State of Oregon.



II. SITE AND THERMAL POWER PLANT DESCRIPTION

A. Site Description

1. The site at, on, and in which the thermal power plants and associated facilities are to be constructed consists of:
 - (a) the 32 sections of land in Morrow County, Oregon, within the boundary described as "Project Boundary" on Figure 1 attached hereto and by this reference incorporated herein.
 - (b) The locations in Morrow County, Oregon, of the following major associated facilities as shown on the attached Figure 1: Carty Reservoir, transmission line rights-of-way, access road, pumping plant, makeup water pipeline, barge unloading facility, dewatering flow easement, and railroad spur. These locations may be adjusted as reasonable or necessary because of physical conditions.
2. The total amount of Class I, II, III, IV, V, and VI agricultural land (according to U.S. Soil Conservation Service Classifications) removed from potential productive capability by construction of the Boardman Thermal power plants and associated facilities shall not exceed 9,000 acres.

B. Thermal Power Plant and Associated Facilities Descriptions

The thermal power plants and associated facilities to be constructed and operated at the Boardman Site consist of any or all of the following:

1. A thermal power plant (Boardman Coal Plant) utilizing a conventional boiler fueled by coal. The unit will have a nominal net electric capacity of 550 megawatts where nominal means plus or minus 50 megawatts.

2. A thermal power plant (Boardman Thermal Plant No. 2) with a nominal net electric capacity between 500 and 1300 megawatts where nominal means plus or minus 50 megawatts. This plant is a "banked plant" and is subject to the review provisions of Section IV.L. of this agreement.
3. A thermal power plant (Boardman Thermal Plant No. 3) with a nominal net electric capacity between 500 and 1300 megawatts where nominal means plus or minus 50 megawatts. This plant is a "banked plant" and is subject to the review provisions of Section IV. L. of this agreement.
4. The associated facilities consist of the cooling reservoir, transmission lines, intake structure, road and rail access, pipelines, barge basin and dewatering flowage as described below:
 - (a) The cooling reservoir, Carty Reservoir, having a surface area of approximately 5,000 acres and a maximum pool elevation of 677 feet MSL.
 - (b) The transmission lines, consisting of three single-circuit 500-kV transmission lines and one 230-kV transmission line.
 - (c) A pumping plant on the Columbia River to supply water for reservoir filling and makeup water requirements.
 - (d) An extension of Tower Road for personnel and equipment access to the plant.
 - (e) A railroad spur line from the existing UPRR tracks to the site for construction access and fuel transport.

- (f) A pipeline from the pumping plant on the Columbia River to the reservoir.
- (g) A barge basin for unloading of large equipment transported to the site by barge for construction.
- (h) A Dewatering Flowage Easement down Sixmile Canyon from the West Dam of the reservoir to the Columbia River.

III. WARRANTIES

In consideration of the execution of this Certification Agreement by the State, and pursuant to ORS 453.395 (4), the following warranties are made:

A. Completion of Construction

PGE warrants that the construction of the thermal power plants will be completed prior to the following dates:

- 1. Boardman Coal Plant - August 31, 1985
- 2. Boardman Thermal Plant No. 2 - August 31, 1991
- 3. Boardman Thermal Plant No. 3 - August 31, 1993

B. Financial Ability

PGE warrants that it presently has or is reasonably assured of obtaining sufficient financial resources to construct and operate the plants, including the funds necessary to cover construction costs, operating costs for the design lifetimes of the plants, related fuel and waste processing and disposal costs, and the cost of permanently shutting the plants down and maintaining them in a safe condition.

C. Ability to Construct and Operate

PGE warrants that it has the ability to take those actions necessary to ensure that the Boardman thermal power plants are constructed and

operated in a manner consistent with the representations regarding effects on the public health, safety, and welfare contained in its site certificate application, as amended, and the terms and conditions of this agreement including, with respect to any nuclear-fueled power plants, compliance with all design, quality assurance, and personnel qualification and training requirements of the U. S. Nuclear Regulatory Commission.

D. Protection of Public Health and Safety

PGE warrants that it will take those actions, including compliance with all applicable Federal Statutes, rules and regulations necessary to ensure that construction and operation of the Boardman thermal power plants pose no danger to the public health and safety.

IV. CONDITIONS

The following conditions are provided pursuant to the provisions of ORS 453.395(3):

A. State and Federal Law

1. Except as provided in Section I as to "banked plants", in the construction and operation of the thermal power plants and associated facilities, PGE and the State shall abide by applicable state laws, including lawful administrative rules and regulations, and the rules of the Nuclear and Thermal Energy Council (Council) as are in effect on the date of execution of this agreement. PGE may be required to comply with stricter state laws or rules of the Council or other state agencies adopted subsequent to the execution of this agreement upon a clear showing that compliance is necessary because

of danger to the public health and safety. However, such rules may not require PGE to meet safety standards more stringent than those of the U. S. Nuclear Regulatory Commission, or to use any equipment or procedure that would cause PGE to lose any Federal license required for operation of the plant.

2. Nothing in this agreement shall relieve PGE from complying with requirements of Federal laws and regulations which may be applicable to construction and operation of the thermal power plants and associated facilities, and with the terms and conditions of any permits and licenses which may be issued to PGE by pertinent federal agencies.

B. Control of Site

Prior to commencement of construction of any of the thermal power plants authorized herein, PGE shall present evidence satisfactory to the Council that PGE has or will obtain control over the site and access thereto, whether by ownership, lease, easement or otherwise to:

1. Construct and maintain the thermal power plants, Carty Reservoir, the associated transmission lines, barge unloading facility, pumping plant, makeup water pipeline, dewatering flow easement, access road and railroad spur;
2. Regulate activities on the site as may be necessary to meet the conditions of this agreement.
3. Assure the road and rail access to the plant necessary to the construction, operation, monitoring and regulation of the thermal power plants and associated facilities.

C. Uses of the Site

1. The site as described in Section II. A. 1, shall not be used for any purpose other than the production and transmission of electrical power. The Council hereby approves the following additional uses of the site, subject to the conditions contained herein:

- (a) Use of access road and transportation facilities by others in a manner which will not conflict with construction or operation of the thermal power plants and associated facilities.
- (b) Use of the pumping plant, pipeline, or reservoir for purposes relating to irrigation.
- (c) Agricultural use in accordance with the site certificate application.
- (d) Residential use by plant operating personnel.
- (e) Recreational use outside the 800 meter exclusion boundary for any nuclear plant; however, no long-term use (greater than 24 hours) shall be permitted.

2. PGE shall permit public access to the site subject to limitations necessary for protection of public health, safety, and welfare, and protection of PGE and nearby landholder property. This shall include reasonable access during daylight hours to a point from which the plant can be viewed somewhere within the area designated in Figure 1 as "Project Boundary".

D. Nuclear Fueled Plants

1. Restrictions Relative to U. S. Navy Boardman Weapons System Training Facility

- (a) No construction shall commence on any nuclear plant until the Council has been presented with satisfactory evidence of an irrevocable decision by the U. S. Navy to terminate its use of the Boardman Weapons System Training Facility on or before a date certain.

- (b) No nuclear plant shall be fueled or operated until the U. S. Navy has terminated its use of the Boardman Weapons System Training Facility.

2. Seismic Design

Nuclear power plants and associated facilities shall be designed such that all structures, systems and components important to the protection of the public health and safety from radiological hazards shall remain functional in the event of an earthquake resulting in a ground acceleration of up to 0.2 g.

3. Spent Fuel and Radioactive Waste

Prior to fueling any nuclear power plant, PGE shall present evidence satisfactory to the Council of its arrangements for:

- (a) Transportation and disposal of low-level radioactive wastes;
and
- (b) Transportation and reprocessing of spent fuel, including disposal of resulting radioactive by-products.

Additional requirements pertaining to inventory and transportation of radioactive material are contained in Council rule 26-195 and in Council rules 60-001 through 60-007. The above requirements are in addition to requirements of the Council rules.

E. Coal-Fired Plant

1. Highest and best Practicable Treatment and Control

Notwithstanding the specific emission limitations and ambient air quality standards set forth below, PGE shall construct and operate the Boardman Coal Plant to provide the highest and best practicable treatment and control of air contaminant emissions, so as to maintain existing ambient air quality at the highest possible levels, and to maintain contaminant concentrations, visibility reduction, odors, soiling and other deleterious factors at the lowest possible levels.

The plant shall employ the following design features or practices in furtherance of this requirement:

- (a) Particulate emissions shall be minimized by use of electrostatic precipitators or a baghouse.
- (b) Emission of nitrogen oxides shall be minimized by furnace design features.
- (c) PGE shall blend or otherwise treat all coal as necessary so that coal burned has a sulfur content and high heating value as follows:

$$\frac{\%S \times 20,000 \times K}{HHV} \leq 1.2 \text{ lb SO}_2 / \text{million B.T.U. heat input, maximum 2 hr. average}$$

Where:

HHV = high heating value of fuel, btu/lb as-fired

%S = sulfur content, by weight percent, of the fuel as-fired

K = 0.97 (if operations satisfactorily demonstrate that the value of K should be reduced, a new

currence by DEQ)

- (d) The sulfur content and high heating value of each shipment of coal shall be determined in accordance with NTEC rule 26-060-11 and reported to the site certificate holder upon or prior to delivery of coal to the site. The analyses shall be supplied to DEQ and the Council upon request.
- (e) PGE shall periodically monitor sulfur content and high heating value of coal being delivered to the boiler in accordance with NTEC rule 26-060-11. The point of sampling, monitoring frequency and program will be such that coal exceeding the limits of (c) above will be detected and diverted in order that corrective action can be instituted to meet the limits of (c) above.

Plans and specifications for air quality control equipment shall be submitted to the Department of Environmental Quality for review and concurrence, with copies to the Council.

2. Emission Standards - Air Quality

The plant shall be designed, constructed and operated in accordance with Federally-promulgated New Source Performance Standards and Department of Environmental Quality Rules in effect as of the date of this agreement. In addition, the following programs and limitations apply:

- (a) Particulate emission from the stack shall not exceed:
 - (1) 0.04 lb. per million B.T.U. heat input 0.07 g per million cal.) maximum two-hour average.

(2) A visible emission for a period or period aggregating more than three minutes in any one hour which is as dark or darker in shade as that designated as No. 1 on the Ringelmann Chart or equal to or greater than 20% opacity. Where the presence of uncombined water is the only reason for failure to meet this requirement, such failure shall not be a violation of this limitation.

(b) Sulfur Dioxide emissions shall not exceed:

1.2 lbs. per million B. T. U. heat input (2.2 g per million cal.) maximum two-hour average.

(c) Nitrogen Oxide emissions shall not exceed:

0.7 lbs. per million B.T.U. heat input (1.26 g per million cal.) maximum two-hour average, expressed as NO_2 .

*(d) The design of the plant shall be such that sulfur dioxide emission control equipment may be installed with a minimum of additional cost and plant disruption. The Council may at any time order such control measures if it concludes they are necessary to comply with Federal or State law, rules or regulations, or Section IV(E)(1) of this certification agreement.

(e) The design of the stack shall be submitted to the Department of Environmental Quality for concurrence, with a copy to the Council.

3. Ambient Air Quality

(a) Ambient air quality standards of the Department of Environmental Quality shall not be exceeded due to plant operations.

(b) Air Quality concentrations of pollutants attributable to plant operation shall not exceed the following:

(1) Particulate Matter:

Annual geometric mean 6 micrograms per cubic meter.

24-hour maximum 15 micrograms per cubic meter.

(2) Sulfur Dioxide:

Annual arithmetic mean 6 micrograms per cubic meter.

24-hour maximum 26 micrograms per cubic meter.

3-hour maximum 130 micrograms per cubic meter.

4. Fuel and Ash

PGE shall continue its investigation into the possibility of burning the combustible fraction of solid waste as a supplementary fuel. PGE shall consult with the Department of Environmental Quality on this subject and will present a summary report of findings to the Council within one year of this agreement.

F. Reservoirs and Hydraulic Structures

1. Final designs, specifications, and construction methods for the reservoir and appurtenant hydraulic structures shall be submitted to the State Engineer prior to construction. No changes shall be made in the final plans without the State Engineer's concurrence.

2. Reservoir make-up pumping facilities shall be designed and operated to the extent practicable such that pumping power consumption is limited during daily and seasonal periods of peak power usage.
3. It is recognized that it may be economically desirable to develop the proposed reservoir in stages, providing the needed cooling capacity for plants as they are constructed. Therefore, the Council shall be kept informed of the plans for reservoir development.
4. If provisions are instituted whereby some other person or organization utilizes site reservoir storage capacity for irrigation, PGE shall advise the Council of the details of such provisions, including:
 - (a) The financial obligations or arrangements involved in the provision.
 - (b) The consequences if for some reason storage capacity becomes unavailable to the other user.
 - (c) The arrangements that exist between PGE and the other user regarding pumpage of water to the reservoir at various times of the year and the limits on the amount of water pumped out of the reservoir.
5. Prior to the commencement of operation of any of the thermal power plants, PGE shall submit to the Council its plan for decommissioning Carty Reservoir in a manner which will present no danger of violating the water quality standards of the State of Oregon.

6. Prior to commencement of reservoir filling, PGE shall submit a written report to the Council describing plans and procedures developed for dewatering the reservoir. These plans and procedures shall ensure that persons or property would not be endangered as a consequence of dewatering.

G. Transmission Lines

1. Transmission and service lines shall be located essentially according to routings indicated on Exhibit 1.
2. Transmission line towers shall be erected a safe distance from the highways as a precaution against collapse in high winds.
3. Transmission line routing shall have the following objectives:
 - (a) The nearest approach to existing residences shall be greater than 1000 feet.
 - (b) Transmission lines shall be routed through non-tillable or less productive land whenever possible.
 - (c) Maximum use shall be made of existing land and transmission line right-of-way.
4. PGE shall construct associated electric transmission lines in accordance with guidelines recommended in "Environmental Criteria for Electric Transmission Systems" February 1970 by the U. S. Department of the Interior.
5. It is agreed by the parties that the failure of the BPA to secure appropriate approvals for the proposed Pebble Springs switching station would constitute a "future unforeseen development" necessitating an amendment of this Site Certification Agreement pursuant to Section V hereof.

H. Barge Unloading Facilities

PGE shall submit a description of any barge unloading facility planned to the Council for information. In addition, PGE shall consult with the Morrow County Planning Commission to determine methods by which the unloading facilities could be made available for use by others.

I. Water Quality

1. Except in the event that it becomes necessary to perform maintenance or repair work on Carty Reservoir, there shall be no discharge of water from the thermal power plants or associated facilities to the Columbia River.
2. Carty Reservoir may be used for direct dissipation of waste heat from the thermal power plants by discharge of cooling water directly to the reservoir.
3. To protect wildlife and to enhance uses of water other than for condenser cooling, concentrations of chemicals in the reservoir in any form shall be limited as follows:

<u>Constituent</u>	<u>Maximum Allowable Reservoir Concentration</u>	
Chloride	100	mg/l
Sulfate	200	mg/l
Sodium	1,000	mg/l
Arsenic	1	mg/l (0.02%)
Boron	0.5	mg/l
Copper	0.1	mg/l (0.0001%)

Cadmium	0.01	mg/l	(1000)
Calcium	500	mg/l	
Chromium	0.05	mg/l	(0.10)
Magnesium	250	mg/l	
Bicarbonate	500	mg/l	
Fluoride	1	mg/l	
Nitrate	200	mg/l	
Total Dissolved Solids	1,000	mg/l	
Mercury	0.01	mg/l	
Zinc	0.01	mg/l	0.09 0.15
pH	7.0 to 8.5		
Sodium Absorption Ratio	6.0 max.		

4. PGE shall comply with the pertinent industry standards for control of surface water runoff during construction and shall take whatever actions are necessary to correct and avoid run-off which detrimentally affects water quality.

J. Historic and Archeologic Sites

1. In development of the site, PGE shall take no action which would adversely affect preservation of Oregon Trail traces.
2. Prior to the start of construction and creation of the proposed reservoir, PGE, through the Museum of Natural History at the University of Oregon, shall conduct extensive archeological investigations of human activity or occupation associated with Fourmile Canyon, Sixmile Canyon, and northwestern outlet to Sixmile Canyon, and two unnamed canyons in the southern part of the basin.

K. Approvals

The following approvals, permits, licenses or certificates by governmental agencies are considered necessary to construction or operation of the thermal power plants, and shall be applied for and obtained by PGE including payment of any associated fees.

1. State Land Board

Permit to remove material from the Columbia River for the construction of an intake/pumping facility and a barge slip.

2. Department of Geology and Mineral Industries

Surface mining permit for excavation disturbance and removal of land surface other than onsite construction.

3. State Engineer

(a) Approval of plans, specifications and construction methods for construction of dams on the northwest and north sides of Carty Reservoir.

(b) Permit for the construction of Carty Reservoir and storage therein of water from the Columbia River.

(c) Permit for appropriation of water from Well 3N24-33 and others as required.

(d) Permit for the appropriation of Columbia River water for power plant construction, landscape plantings, fire protection and domestic use at the plant site and for cooling water for the plants including makeup, evaporation and seepage losses.

4. State Highway Division

- (a) Permit to install intake water piping, conduit for power and communication cables under State Highway No. 2 (I-80N).
- (b) Permits for heavy loads on State highways and roads.
- (c) Permits to install overhead power line crossing of State Highway No. 2 (I-80N) and State Highway No. 52 (Route 74.)
- (d) Permit for widening and channelization of State Highway No. 2 (I-80N) to provide deceleration lanes at Tower Road Junction, if required.

5. Public Utility Commissioner

Approval for railroad spur to cross State Highway No. 2 (I-80N).

6. Wildlife Commission

- (a) Approval that the intake/pumping facility is so designed as to protect sport fish resources.
- (b) Permit to collect wild animals, birds, amphibians, reptiles and game fish upon and in the vicinity of the site for ecological and radiological studies.

7. Fish Commission

- (a) Approval that the intake/pumping facility is so designed as to protect commercial fish resource.
- (b) Permit for the use of underwater explosives in the Columbia River during construction of the barge slip and the intake/pumping facility.

8. Department of Environmental Quality

- (a) Approval of the waste discharge effects during the construction of the plant.

- (b) Approval of the design and construction drawings of the sewage stabilization pond to be used for construction and plant operation.
- (c) Solid waste disposal permit for the onsite disposal of ash or other solid waste.
- (d) State waste discharge permit covering disposal of both cooling and process waters and domestic sewage for both nuclear and coal plants.
- (e) Air contaminant discharge permit for operation of the Boardman coal plant.

9. State Health Division

- (a) Approval of the design of the sanitary water system.
- (b) Approval of nuclear plant emergency response plan.

10. Department of Commerce

- (a) Approval of Pressure Vessel and Piping Code inspection procedures in compliance with the Oregon Boiler and Pressure Vessel Law.
- (b) Approval of applicable construction drawings by the State Fire Marshal.

11. Emergency Services Division

- Approval of nuclear plant emergency response plan.

12. Department of Commerce or Morrow County

- Building permits as required.

13. Morrow County

- (a) Permit for heavy loads on country roads.
- (b) Conditional use permit or zone change, as necessary.

It is agreed by the parties that future identification of additional approvals, permits, licenses or certificates necessary to construction or operation of the thermal power plants would constitute a "future unforeseen development" necessitating an amendment of this agreement pursuant to Section V hereof. In this event, the agency seeking to require such an approval, permit, license or certificate shall substantiate the necessity for it, and the reason it was not identified in the site certification agreement.

L. Banked Plants

1. Boardman Thermal Plants No. 2 and 3 are deemed "banked plants" and are subject to the review process set forth in 2 through 6 below in the event PGE wishes to commence construction of either or both plants.
2. PGE shall give the Council eight month's notice prior to commencement of construction of a "banked plant." Such notice shall be accompanied by a statement describing all modifications in the information contained in PGE's site certificate application and conclusions drawn therefrom. Without limiting the generality of the foregoing, the statement shall contain detailed current information on the type and design of plant to be constructed, the associated environmental impact, the need for power, plant economics, PGE's financial ability, and environmental baseline information and standards.
3. The Council shall distribute PGE's notice and statement to affected state and local governmental agencies requesting their comments

and recommendations within 30 days of the date of distribution.

4. The Council shall hold a public hearing on construction of the "banked plant" within 90 days after distribution of the notice and statement.
5. Within 180 days after receipt of the notice and statement from PGE the Council shall make findings as to the nature and extent of changes, if any, from the facts considered by the Council in the record supporting issuance of the original site certificate. If there has been no substantial change in such facts, the Council shall issue a new certificate containing the same terms and conditions as the original certificate except that the warranted date of completion may be appropriately extended. If there has been a substantial change in such facts, the Council shall issue a new certificate with different or additional conditions to the extent justified by changes in factual or technological circumstances or, if such change makes it impossible for the Council to make the findings required by ORS 453.405 to 453.575, it shall revoke the original certificate.

6. After expiration of the appeal period authorized by ORS 183.480 or after an appeal is completed, the Council's decision, if affirmative, shall be sent to the Governor for execution or veto as provided in ORS 453.395 (1) and (6).

V. AMENDMENT OF SITE CERTIFICATION AGREEMENT

- A. PGE and the State recognize a need to provide a means of amending this agreement, because of the length of time which will pass between the date of its execution and the date of construction and operation of the facilities. Therefore, the parties agree that in the event future unforeseen developments cause the construction or operation of the thermal power plants or associated facilities to present a danger to the public health, safety, or welfare, this agreement may be amended by further written agreement, executed in the manner provided in ORS 453.395 (1), after compliance with the procedures of B. through F. below.
- B. Either PGE or the Council Staff may propose a corrective amendment. The proposal shall set forth the amendment verbatim, together with a statement of the reasons therefor.
- C. The Council shall distribute the proposed amendment to the state agencies specified under ORS 453.345 (3), the county advisory group specified in ORS 453.475 (1) and to all parties to this proceeding, requesting comments and recommendations on the proposed amendment within 30 days of the date of distribution.

D. The Council shall hold a public hearing on the proposed amendment within 90 days after distribution of the proposed amendment.

E. At the conclusion of the hearing and in no case more than 120 days after the proposed amendment was distributed, the Council shall, based on its findings as to danger to the public health, safety, and welfare, either recommend or reject the proposed amendment, by a vote as required in ORS 453.365 (1). Rejection or approval of a proposed amendment shall be subject to judicial review pursuant to the provisions of ORS Chapter 183.

F. After expiration of the appeal period authorized by ORS 183.480 or after an appeal is completed, the proposed amendment approved by the Council shall be sent to the Governor for execution or veto as provided in ORS 453.395 (1) and (6).

G. Amendments Not Affecting Public Health, Safety or Welfare

Where PGE and the Council staff agree that it is desirable to amend this site certificate for reasons other than set forth in A. of this section either may file with the Council an application for an amendment to the Site Certificate Agreement which application shall state the necessity and reasons therefor. The Council may grant such application without further proceedings.

VI. SUCCESSORS AND ASSIGNS

This agreement is binding upon PGE and any co-owners, partners or joint venturers of PGE in the construction and operation of the thermal power plants and associated facilities, and upon any successors in interest to or assignees of either PGE or any co-owner, partner or joint venturer.

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

LC 48

In the Matter of)	
)	
PORTLAND GENERAL ELECTRIC	)	SIERRA CLUB, COLUMBIA
	)	RIVERKEEPER, FRIENDS OF
2009 Integrated Resource Plan	)	THE COLUMBIA GORGE, AND
	)	THE NORTHWEST ENVIRONMENTAL
	)	DEFENSE CENTER'S COMMENTS
	)	ON STAFF'S PROPOSED ORDER and
	)	REPLY TO PGE'S RESPONSE TO
	)	COMMISSION BENCH REQUEST

Exhibit 3



Portland General Electric Company

Legal Department State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY

RECEIVED
JUL 10 1981

July 7, 1981

AIR QUALITY CONTROL

Mr. Joe Richards, Chairman
Environmental Quality Commission
300 Forum Building, 777 High Street
P. O. Box 10747
Eugene, Oregon 97440

James W. Durham
Senior Vice President and General Counsel

Senior Assistant General Counsel:
Alvin Alexanderson
Warren Hastings
Richard M. Sandvik

Assistant General Counsel:
James C. E. Brockdale
Roland A. Johnson
Frank W. Johnson
Steven F. McCarrel
Dorothy E. Holtrock

Re: Proposed New Source Review and Plant Site Emission
Limits

Dear Chairman Richards:

It is my understanding that at the July 1 workshop you asked me to prepare another written statement of PGE's position on Boardman Unit 1 emissions and the New Source Review calculation of "baseline concentration", which as far as we know is a problem only for PGE.

I will also take the opportunity to briefly restate PGE's position on the impact of the proposed Plant Site Emission Limits on PGE's combustion turbines, as I do not feel the issue was thoroughly discussed at the workshop.

NEW SOURCE REVIEW

PGE has a site certification agreement with the State of Oregon, dated March 24, 1975, which allows the construction of three thermal power plants at the Carty Reservoir site near Boardman, Oregon. One coal-fired plant has been built at the site, which we refer to as Boardman Unit 1. As part of the site certificate agreement, PGE consented to air quality controls for the first unit which are much more restrictive than required by either federal or state law. PGE feels that the State is committed to allowing additional coal-fired units at the Carty site, subject, of course, to the requirements of federal air quality law and reasonable state energy facility siting standards.

If PGE elects to install a second Boardman unit, that unit will be subject to the proposed New Source Review rules. At that point, it will become very important whether emissions from the first unit are in or out of the baseline concentration.

1300 Willamette Center
121 S.W. Salmon Street, Portland, Oregon 97204
(603) 220-3000

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Mr. Joe Richards
July 7, 1981
Page 2

A case can be made that Boardman Unit 1 had commenced construction as of January 6, 1975 and therefore its emissions would be considered in the baseline, if one uses EPA definitions and policies prevailing at the time the site certification agreement was executed by Governor Straub. The pertinent EPA definition of "commenced", found at 39 FR 42515, reads as follows:

"'Commenced' means that an owner or operator has undertaken a continuous program of construction or mobilization or that an owner or operator has entered into a binding agreement or contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification."

The evidence that PGE satisfies the above definition for Boardman Unit 1 is essentially that on March 15, 1974 PGE entered into a letter of intent with Westinghouse Electric Corp. for fabrication of the turbine-generator and on October 1, 1974 entered into a 24-year coal supply contract with Amax Inc.

Regrettably, the EPA definition of "commenced construction" was amended some time after the Boardman site certificate was executed to require that an owner or operator of a source have in hand "all necessary preconstruction approvals". The new EPA definition, which has been incorporated by Staff into the proposed New Source Review rules, could be interpreted in such a way that Boardman Unit 1 emissions are not in the baseline.

These developments are most distressing to PGE, and should be to the State as well, since from a public policy standpoint, Boardman Unit 1 emissions clearly should be deemed in the baseline:

1. The Boardman area is an excellent site for coal-fired power plants, perhaps one of the few in the State. Insofar as energy development is needed in Oregon, it should be facilitated in this area. The Boardman area has good access to existing transmission lines; it is accessible to fuel supplies; it has adequate water for cooling; it has good air dispersion; it is far from population centers and scenic resources; and its citizens favor energy development. If Boardman I emissions are not in the baseline, the most efficient utilization of the plant site for additional generating units may be precluded.

2. If Boardman I emissions are not in the baseline, but are in the PSD increment, PGE's ratepayers may be required eventually to spend over \$60 million on additional pollution control equipment for Unit 1. PGE believes that such an extreme result should not occur simply because of an arbitrary EPA date, which has nothing to do with Oregon's interests, but should only occur if justified on the basis of measured, site specific impacts on Oregon residents. By requiring SO₂ scrubbers on new units, even those using low-sulfur western coal, EPA has demonstrated its insensitivity to local conditions.
3. For regulatory purposes, the State has been treating Boardman Unit 1 emissions as part of the given air shed in the region since 1974. It would seem unfair for the State at this late date to not consider Boardman I emissions in the baseline.

PGE is in no position to convince EPA to revise its New Source Review definitions or even to give PGE a favorable clarification of such definitions. Since the Commission is proposing to take over implementation of the Clean Air Act in Oregon, the Commission is uniquely positioned to take the initiative in this matter.

The Commission can cure the problem in either of two ways. The simplest is to insert an interpretive statement following OAR 340-20-225(2)(b), as follows: "Emissions from sources not subject to New Source Review under EPA regulations in effect on March 24, 1975 shall be included in the baseline concentration." Under this scheme, focus would be directed to a decision, already made by EPA, that Boardman Unit 1 is not subject to New Source Review.

Alternatively, the Commission could put a notation following OAR 340-20-225(5)(b), as follows: "Emissions from sources on which construction commenced before January 6, 1975, as defined by EPA regulations in effect on March 24, 1975, shall be included in the baseline concentration."

The State need not assume that the revisions suggested by PGE will trigger an adverse comment by EPA. In any event, it seems to me that the Commission will be in a better position to prevail in some future language dispute with EPA if the Commission's language has been adopted as a final rule.

I hope this material is of value to you and to Staff in evaluating appropriate language to be used in the New Source

4 of 5

Mr. Joe Richards
July 7, 1981
Page 4

Review rules. A decision of this importance should be made by the State and local regulatory or legislative processes on the basis of what "ought to be" and not by blind application of a vacillating federal policy insensitive to local needs.

PLANT SITE EMISSION LIMITS

PGE urges the Commission to recognize that PGE's combustion turbines, unlike other sources, have no "normal" operation at all. By way of illustration, PGE's Beaver units operated a total of 2104.8 hours in 1977, 790 hours in 1978, and 9167.3 hours in 1979. Which year is typical? In 1979, emissions appear high and yet future conditions may be such that the 1979 emissions will be on the low side.

The Staff recognizes that PGE, unlike most source owners, does not want to operate its facilities and yet must be allowed to operate them if needed to continue to serve its customers. The Department is in the process of issuing a 5-year Air Contaminant Discharge Permit for the Beaver Plant which contains no mass emission limits. Under the proposed rules, approved emissions in a renewal permit might be only 10% of currently-allowed emissions. Why establish emission limits based on 1977 or 1978 operating history and then require PGE to come in and petition for a permit change?

In our opinion the rule should simply provide that the actual emissions for combustion turbines are reasonable worst case projections. I suggest a new subsection (c) be added to OAR 340-20-305(1), as follows: "For any combustion turbine electric generating facility, actual emissions shall equal reasonably projected worst case operation."

Very truly yours,

Roland A. Johnson
Roland A. Johnson

0077/1/dp

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**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

LC 48

In the Matter of)	
)	
PORTLAND GENERAL ELECTRIC)	SIERRA CLUB, COLUMBIA
	)	RIVERKEEPER, FRIENDS OF
2009 Integrated Resource Plan	)	THE COLUMBIA GORGE, AND
	)	THE NORTHWEST ENVIRONMENTAL
	)	DEFENSE CENTER'S COMMENTS
	)	ON STAFF'S PROPOSED ORDER and
	)	REPLY TO PGE'S RESPONSE TO
	)	COMMISSION BENCH REQUEST

Exhibit 4

4/26/91 11 10:20 AM

PORTLAND GENERAL ELECTRIC COMPANY
121 S.W. SALMON STREET
PORTLAND, OREGON 97204
(503) 464-8401

PEGGY Y. FOWLER
VICE PRESIDENT
POWER PRODUCTION

March 25, 1991

Honorable William K. Reilly, Administrator
U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460

Re: Boardman Coal Plant Baseline Adjustment Under
Section 402 of the Clean Air Act Amendments of 1990

Dear Mr. Administrator:

On behalf of the owners of the Boardman Coal Plant in Oregon, I am writing to respectfully request that you exercise the discretion accorded to the agency under Section 402(4)(A) of the Clean Air Act Amendments of 1990 (the 1990 Act) to provide an adjustment to the plant's baseline that reflects its normal operation as a baseload facility. Specifically, we request a baseline that reflects operation of Boardman at a 65 percent capacity factor.

The Boardman unit was completed and began commercial operation in 1980. The plant is operated by Portland General Electric (PGE), which holds a 65 percent ownership interest in the plant, along with Idaho Power Company (10 percent), Pacific Northwest Generating Cooperative (10 percent) and General Electric Credit Corporation (15 percent). The facility was constructed in the 1970's as a baseload plant in response to rising electricity demand at that time in the Pacific Northwest.

Pursuant to the 1990 Act the Boardman unit is required to hold SO₂ emission allowances under Phase II beginning in the year 2000. The period of 1985, 1986, and 1987 forms the baseline from which a plant's average annual fuel consumption is measured for purposes of calculating these allowances. During the entire 1985-87 period, however, Boardman operated for only two months (July and August 1985). Thus, calculating the Boardman baseline for the plant using data covering the entire three year period would not reflect the plant's design and normal operation as a baseload plant. Our research indicates that Boardman is the only baseload coal fired plant in the United States that operated at such a restricted level during the baseline years.

Boardman would have operated much more had it not been for unfavorable long-term coal supply and rail arrangements and a temporary surplus of power in the Pacific Northwest. We recently terminated that coal contract and negotiated substantially lower



rail costs. As a result of Boardman's reduced variable cost of production and load growth which has eliminated the temporary surplus, Boardman now operates continuously as a baseload facility; during the most recent months Boardman has operated at 85 percent of capacity. It is thus reasonable to expect that the 1985-87 period will not be representative of future Boardman operating levels.

Of further importance, we have made investments of \$24.5 million over and above our initial \$525 million investment to maintain Boardman as a vital, baseload component of our system. We are also about to purchase railcars worth \$6 million for increased coal transportation to support baseload operation. These capital investments would not have been made, or be made, in order to operate Boardman as a peaking facility, and Boardman's owners and their customers will suffer economic hardship if these capital investments cannot be recovered through baseload operation.

For the reasons discussed below we do not believe that alternatives to a baseline adjustment are economically reasonable.

• Scrubber Installation Would Be Prohibitively Expensive.

A reasonable estimate of the cost to retrofit a scrubber to Boardman would be at least \$100 million. The combination of high capital cost of retrofit and the low sulfur content of the coal actually being consumed at the plant would make the dollar-per-ton cost at least \$1700 to remove SO₂ at Boardman with a scrubber. This is high relative to other coal plants where dollar-per-ton costs range from \$400-\$1500. We assume allowances purchased on the market would therefore cost less than \$1700, and we conclude the addition of a scrubber would not be economically feasible.

• Allowance Purchases Could Be Prohibitively Expensive.

Without a baseline adjustment, beginning in the year 2010 Boardman would be forced to purchase virtually all of its annually required emission allowances in order to operate as a baseload unit. Boardman represents a special case among Western coal plants: rather than siting it near a coal mine in Wyoming or Montana, we sited Boardman in eastern Oregon to be closer to our load center, avoiding the need for a substantial amount of transmission capacity across the Rocky Mountains. As a result, coal must be

transported over a thousand miles by rail, significantly increasing Boardman's variable cost of production. The purchase of emission allowances would increase Boardman's variable cost of production by an estimated ten to thirty-five percent and thereby result in significantly reduced dispatch of the plant (ten percent at \$400 per ton, thirty-five percent at \$1500 per ton). Purchase of emission allowances would thus cause Boardman to be dispatched less, while other coal plants with higher emissions would operate at much higher capacity factors. We believe the 1990 Act did not intend this result. If, in spite of the increased variable cost of production due to the requirement for emission allowances, Boardman were to operate as a baseload plant in Phase II, the necessary allowances would result in additional annual costs of \$6-21 million (at \$400-1500 per ton) to Oregon retail consumers. We also believe the 1990 Act did not intend this result for a plant in Boardman's circumstances. PGE plans to pursue conservation bonus allowances for its conservation investments under Section 404(f) of the 1990 Act; however, this would not be a significant number of allowances compared to Boardman's needs.

• Neither Additional Gas-Fired Generation Nor Conservation Should Be Considered An Alternative To Boardman.

According to the Northwest Power Planning Council, the temporary power surplus that the Pacific Northwest experienced in the 1980's is gone and loads will continue to grow. The council assumes Boardman to be a baseload plant in the future and foresees the need to add generating resources in the region. PGE's Least Cost Plan filed with the Oregon Public Utilities Commission provides for Boardman to operate as a baseload plant and indicates that PGE will need an additional 500 megawatts of energy by the year 2001. If Boardman does not operate as a baseload plant in the long run, new natural gas-fired generation will be substituted when Boardman is idle. This underutilization of Boardman would increase reliance on energy imports (in this case, the gas would come from Canada). PGE and other Pacific Northwest utilities are currently making substantial capital investments in conservation, and these will continue into the future. But this conservation will not eliminate the need for Boardman as a baseload facility.

In judging this request we ask you also to consider the general level of coal plant emissions in the State of Oregon.

Honorable William K. Reilly
March 25, 1991
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Boardman is located in a remote area of the State, and there are no plans for new coal plants in Oregon. Although it does not have a scrubber, Boardman is a relatively clean coal plant with a current SO₂ emission rate at about 0.8 lb/mmBtu.

With respect to the specific baseline adjustment for the plant, we request the exclusion, pursuant to Section 402(4)(A), of the 34 months during which Boardman did not operate from the calculation of the baseline. This reflects the unit's normal operation as a baseload plant and is consistent with the EPA's authority to exclude from the baseline periods of shutdown for four or more continuous months. The October 26-27, 1990 statements in the House and the Senate on Boardman during consideration of the conference agreement clearly show that the Congress intended Boardman's problem to be specifically addressed through the exercise of the EPA's discretionary authority under Section 402. We do not request, however, that the two months of actual Boardman operation in 1985 simply be extrapolated to calculate a high annual capacity factor. Instead, we believe it would be reasonable and equitable to treat Boardman like the clean-coal plants which began operation in the 1981-85 period, shortly after Boardman began commercial operation. These units were accorded permanent relief at a 65 percent capacity factor under Section 405(d)(4), and it is that baseline level which we request for Boardman.

In closing, as a matter of public policy and consistent with Congressional intent, we urge that Boardman be allowed to operate at a normal capacity as a baseload plant. The plant burns clean coal efficiently, and no alternatives to a baseline adjustment offer an economically viable solution.

Your consideration of this request is greatly appreciated, and we look forward to hearing from you at your earliest convenience. We understand that the agency is working under severe constraints to meet regulatory milestones. It is our hope that a determination can be made by late May, 1991.

Please feel free to call me if you or your staff have any questions or if you require additional supporting information.

Sincerely,

Peggy Y. Fowler

Peggy Y. Fowler

Attachment

ATTACHMENT 1
Boardman SO₂ Emission Allowance
Cost Analysis

Increased Variable Cost of Production

Assumed Phase II SO₂ Emission Allowance Price is 900 \$/ton. The basis for this assumption is an approximate midpoint of a 400-1500 \$/ton range, where 400 \$/ton is about the least expensive SO₂ reduction measures available nationwide, and the 1500 \$/ton to be offered for direct sale to prime the market is considered an upper limit. 900 \$/ton is PGE's estimate of the equilibrium market price.

Boardman's Variable Cost of Production

(fuel, variable O&M): 18 mills/kwh (approximately)
Boardman's Heat Rate: 10,500 Btu/kwh
Boardman's SO₂ Emission Factor: 0.8 lb/MMBtu (approximately)

$$\text{Emission Allowance Cost (mills/kwh)} = \frac{(900 \text{ \$/ton})(1000 \text{ mills/\$})(10,500 \text{ Btu/kwh})(0.8 \text{ lb}/10^6 \text{ Btu})}{(2000 \text{ lb/ton})}$$

- 3.8 mills/kwh, rounded to 4 mills/kwh.

Therefore, purchasing emission allowances to operate Boardman would increase the variable cost of production from about 18 mills/kwh to 22 mills/kwh. This is a large enough increase to change its position in the economic dispatch stack at times, causing it to be dispatched less.

Estimated Financial Impact at Baseload

The increased cost of energy from Boardman to achieve a 78% capacity factor is estimated in Table 1 below with two possible emission allowance allocations:

- A. If Boardman is allocated allowances equivalent to a 65% capacity factor, which is based on the relief given to clean coal plants beginning commercial operation between 1981 and 1985 under Section 403(d)(4),

$$\text{Increased Cost of Production (\$/MM/yr)} = \frac{(4 \text{ mills/kwh})(8760 \text{ hr/yr})(.13)(\$30,000 \text{ kw})}{(1000 \text{ mills/\$})}$$

- \$2.4 million/yr

- B. If Boardman is only allocated allowances equivalent to a 7% capacity factor, which is 120% of Boardman's baseline adjusted for forced and maintenance outages,

$$\text{Increased Cost of Production (\$/MM/yr)} = \frac{(4)(8760)(.71)(\$30,000)}{(1000)} = \$13 \text{ million/yr}$$

Table 1
Financial Impact
at Baseload Operation

Plant Capacity Factor	Emission Allowances in Tons/yr and Capacity Factor Equivalent		Increased Variable Cost of Production in 1991 Dollars	
	Given	Purchased	mills/kwh	\\$/MM/yr
78%	12,675 (65%)	2,535 (13%)	4	2.4 - reasonable
78%	1,365 (7%)	13,845 (71%)	4	13 - unfairly large



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