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March 11, 1985

Mr. H. L. Thompson, Jr.
Director
Nuclear Reactor Regulation
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Oyster Creek Nuclear Generating Station
Docket No. 50-219
Proposed Expanded Safety System Facility (ESSF)

This letter is to apprise you of certain improvements GPU Nuclear is studying and may propose to undertake at the Oyster Creek Nuclear Generating Station (OCNGS). The improvements would be housed in a structure that is referred to as the Expanded Safety System Facility (ESSF) for the Oyster Creek Nuclear Generating Station. We have, within the past year, had discussions regarding this facility with members of your staff and Region 1 personnel. To supplement those discussions, the purpose, scope, approach, and status of the proposed project is more fully described in the attachment to this letter.

The ESSF is being considered as a sound technical and programmatic approach to enhancing the safety capabilities of the OCNGS as well as improving its overall operational capability and reliability. The facility would serve to satisfy current and future regulatory modifications, and would help ensure that OCNGS can achieve its expected full licensed lifetime. Our preliminary engineering and licensing studies for the ESSF indicate that its implementation will not involve an unreviewed safety question under 10CFR50.59, that we will comply with Systematic Evaluation Program (SEP) criteria, and that we will fulfill both of these objectives by utilizing, to a large extent, equipment procured from cancelled nuclear generating stations. Our present assessment of this utilization of surplus equipment, the basis for licensability, and project criteria are more fully described in the attachment.

Our ongoing studies and evaluation of the need, priority, and preliminary schedule of the ESSF are being addressed as a part of an overall assessment of our Oyster Creek plant improvement program. However, because of the very substantial resources which would be involved with the ESSF, we want to ensure that our approach and bases are fully consistent with regulatory requirements. We are prepared to meet with your staff and Region 1 personnel

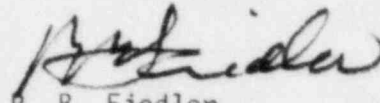
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to more fully discuss the ESSF and provide such additional information as you might require. To confirm our understanding of NRC requirements, we would like to have your concurrence with the acceptability of our approach prior to our management review of the preliminary engineering in the spring of 1985. Therefore, a response is requested by April 15, 1985.

If you have any questions regarding this letter or the ESSF project, please call M. W. Laggart of my staff at (201) 299-2341.

Very truly yours,



P. B. Fiedler
Director
Oyster Creek

ATT

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Attachment
Oyster Creek Nuclear Generating Station
Proposed Expanded Safety System Facility (ESSF)

Background:

The Oyster Creek Nuclear Generating Station (OCNGS) has been in operation for 15 years and has undergone a large number of regulatory and owner initiated changes since its original design in the early 1960's. OCNGS was included in the NRC's Systematic Evaluation Program (SEP), initiated in 1977, to assess the inherent safety characteristics of older plants in light of newer regulatory guidance. The Oyster Creek SEP integrated assessment was completed in January, 1983, (NUREG 0822), which confirmed the overall safety of the Oyster Creek plant. This integrated assessment, therefore, provides the basis for planning the long range activities at the station.

Prior modifications to the facility, the impact of the SEP Program, and the NRC post TMI-2 regulatory requirements (NUREG 0737) have resulted in reducing reserve capacity of the existing safety grade diesels and have identified the desirability of additional space to house a safety grade control room ventilation system. In addition, our own assessment has identified the need for additional space for possible future regulatory changes as well as owner initiated changes which would be designed to improve the reliability and capacity factor of the plant. We have tentatively concluded that additional safety grade diesel power, electrical distribution capability, and the regulatory required safety grade control room ventilation, may best be accomplished by incorporating all requirements into a new building contiguous to existing station structures. We have designated this structure the Expanded Safety System Facility (ESSF) and are considering locating it adjacent to the north side of the existing Reactor and Turbine Buildings.

Scope:

The project scope being considered for the ESSF includes provisions for two 2500 kw safety grade diesel generators, appropriate safety grade electrical distribution equipment, a safety grade control room ventilation system in response to NUREG 0737, and necessary building service equipment. We initiated conceptual engineering of the facility in 1983-84, and late in 1984 placed Stone & Webster Engineering Corporation under contract to proceed with the preliminary engineering, final program cost estimates and confirmation of the technical approach established in the conceptual engineering. The technical approach is one of compliance with both the SEP and original design basis licensing criteria for Oyster Creek, but flexible enough to take advantage of current conditions in the nuclear industry.

It is envisioned that the building structure for the ESSF will be a pile supported, three-story freestanding structure of approximately 9000 ft² footprint and three stories above grade. The seismic design of the facility is to be based on the SEP approved site specific spectra for Oyster Creek. The building would be located immediately adjacent to the north wall of the Reactor and Turbine Building structures. The building internals would be segmented to provide space for redundant equipment, allow separate space for non-safety and safety grade equipment, and would contain appropriate service systems.

Two 2500 kw air cooled diesel generators would be located on the first floor, together with the electrical distribution equipment. The diesels would have independent auxiliary systems. The electrical distribution system would be available to accept relocation of selected non-safety loads from existing Oyster Creek Station buses and add new ESSF safety and non-safety equipment protection loads.

The control room HVAC would replace the existing system with a system satisfying NRC requirements of NUREG 0737. The system would improve temperature, humidity, dust, toxic and radiological influent environments in the control room. Building support services are expected to include cooling for the diesel generators and the control room ventilation chillers, fire protection, security, communications, and service and domestic systems as appropriate.

It is our intent that the entire facility would increase electrical capacity and operating flexibility for the station, provide needed expansion space and meaningfully improve the overall safety margins in the plant as they might be affected by loss of off-site power. Several preliminary drawings are attached which provide some additional detail of the present facility concept.

Project Plan:

Our current basis for proceeding with the ESSF is that the facility meet the original Oyster Creek Licensing design criteria as modified by the SEP Program. To help reduce the schedule for completing the facility we expect to utilize, to the maximum extent possible, equipment available as a result of cancelled nuclear units.

Where we would intend to use that equipment in safety related functions, we would perform an engineering review of the available equipment and supporting software to confirm that it meets or exceeds the Oyster Creek licensing basis or can be upgraded to meet such basis through engineering analysis. Specifically, we would propose to meet the following:

Natural Phenomena:

The building structure would be designed, constructed and the equipment procured based on building spectra to be developed by utilizing the approved site specific ground response spectra (letter from D. M. Crutchfield to all SEP owners dated June 17, 1981, site specific ground response spectra for SEP plants located in the eastern United States). Surplus equipment and its supporting documentation will be reviewed and/or upgraded through engineering analysis to confirm its acceptability to the Oyster Creek SEP criteria even though the surplus equipment may have been bought to different seismic spectra. We do not anticipate any difficulty in qualifying the surplus equipment by engineering analysis for the Oyster Creek SEP seismic spectra.

Design features to cope with other natural phenomena, such as tornado and flooding, will be analyzed using either the criteria established during the SEP program, by means of the NRC approved Safety Evaluation Reports (SER's) or for those items which do not yet have an approved SER, GPUN's submittal proposing resolution will be utilized.

Environmental Qualification - Electrical equipment would be environmentally qualified to perform any required safety function and to operate in the most severe environment expected. Equipment located in a harsh environment would be qualified as required by 10CFR50.49.

Fire Protection - All equipment would be installed in the facility to meet the current Appendix R fire protection requirements, however, it is not anticipated that any equipment will be required to meet requirements imposed by the Appendix R remote shutdown requirements.

Equipment Procurement:

Diesel Generators - It is anticipated that diesel generators would be procured from a cancelled nuclear unit or we will utilize the spare 2500 kw General Motors diesel generators currently owned by Metropolitan Edison and located at TMI-2. The diesels would have independent auxiliary systems, be individually air cooled through separate radiators and meet or exceed the original licensing basis for the Oyster Creek plant.

HVAC Equipment - The control room heating/ventilating equipment is also expected to be surplus equipment originally procured for other nuclear power plants. The system would be redundant, single failure proof and supplied with Class 1E power from the ESSF diesel generators. It is expected that the equipment would have appropriate quality assurance documentation and such documentation would be reviewed/upgraded to ensure compliance with the Oyster Creek licensing documents. It is intended that the equipment and system meet the requirements of NUREG 0737, III.D.3.4.

Electrical Distribution - The electrical distribution system would meet the Oyster Creek Plant Class 1E requirements including current requirements for cable separation, fire protection under Appendix R, and protective fusing and relaying. Equipment is expected to be predominantly surplus equipment from cancelled nuclear stations, and the equipment documentation would be reviewed to ensure it meets Oyster Creek SEP seismic requirements. Surplus electrical equipment will be reviewed against R.G. 1.9 (Rev 2), R.G. 1.89 (Rev 0), R.G. 1.100 (Rev 1) and R.G. 1.75 (Rev 2) and exceptions to these documents would be evaluated as part of the review of the material prior to a final determination that the equipment is suitable for use in the ESSF.

Licensing Basis:

A number of the modifications associated with the ESSF project require physical tie-ins to existing plant systems, structures and components. Consistent with 10CFR50.59, safety evaluations and independent safety verifications would be performed in accordance with GPUN procedures as necessary to confirm that an unreviewed safety question would not exist as a result of the ESSF project. Our preliminary safety evaluation of the current conceptual engineering meets the requirements of 10CFR50.59. Specifically, we have not identified any existing OCNCS technical specifications which would require revision nor have we identified any unreviewed safety questions generated by the addition of the ESSF. We have come to this latter conclusion based on project objectives which are intended to improve the reliability and flexibility of safety and non-safety systems by improving the reliability of on-site power supplies and

by the extensive upgrading of the Control Room HVAC functions. The functions of the ESSF will be independent of existing engineered safety features such that new or different accident sequences would not be created. As such, we envision the entire ESSF project being performed under the provisions of 10CFR50.59. This approach appears to be consistent with similar additions at the Susquehanna, Rancho Seco and Sequoyah Nuclear Power Stations.

We recognize that many of the features of the ESSF are of such a nature that the NRC may request new additional technical specifications governing the availability of ESSF equipment. This does not, however, alter our understanding of the provisions of 10CFR50.59 with respect to our proceeding with this project without prior NRC approval.

Preliminary Schedule:

Current preliminary schedule for the ESSF calls for completion of preliminary engineering in the spring/early summer of 1985, with all engineering largely completed by 1986. It is anticipated that some equipment procurement would occur by mid-1985, and that some site construction work, including the building substructure, would occur in 1986. Major construction would occur late 1986-87, early 1988, with the building placed into operation and tied in to the existing facility in the Cycle 12 outage now expected to occur in approximately spring, 1988. The above schedule is contingent upon an overall review of the needs and priorities for Oyster Creek and development of the plant improvement program following completion of preliminary engineering in spring/early summer of 1985, as well as receiving NRC agreement with the regulatory and licensing approach for this project.