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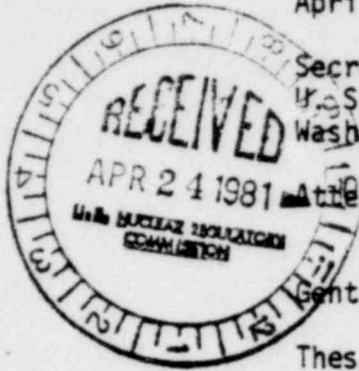
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DOCKET NUMBER PR-50  
PROPOSED RULE  
(46 FR 18045)

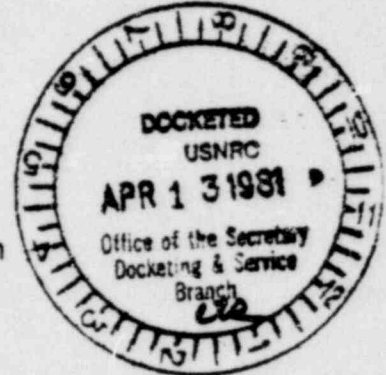
**Offshore Power Systems**

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April 9, 1981



Secretary of the Commission  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555



Attention: Docketing and Service Branch

Gentlemen:

A. R. Collier,  
President

These comments are filed by Offshore Power Systems in response to the Commission's invitation for comments concerning proposed TMI-related licensing requirements for pending Construction Permits and Manufacturing License applications published in the Federal Register on March 23, 1981 (46 Federal Register 18045). The Commission "particularly sought (comments) on whether the rule should be applied to the pending Manufacturing License application." For the reasons discussed below, Offshore Power Systems strongly maintains that the proposed rule should be applied to the pending Manufacturing License application and urges the Commission to do so.

The proposed rule, and its applicability to the Manufacturing License proceeding, has been discussed in a series of Commission meetings commencing in January 1981. The Commission discussion concerning whether to include the Manufacturing License within the scope of the proposed rule revolved around the following two questions:

1. Whether the fact that Offshore Power Systems does not presently have a contract from a utility customer for purchase of a Floating Nuclear Plant should result in exclusion of the Manufacturing License application from the scope of the rule, and
2. Whether the proposed requirements for the capacity of containments to withstand the effects of accident-generated hydrogen are sufficient when applied to the Floating Nuclear Plant.

We address each of these questions below.

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1. No Necessity for Contract with Utility Customer. The fact that there is no current contract between Offshore Power Systems and a utility customer for the Floating Nuclear Plant does not disqualify the Manufacturing License application from coming within the scope of the proposed rule because there is no such requirement in the Commission's regulations. Simple fairness as well as the right to equitable treatment under Commission regulations requires that the standards for Near-Term Construction Permit applications should apply to the Manufacturing License application.

The application by Offshore Power Systems for a Manufacturing License was submitted to the then Atomic Energy Commission on January 22, 1973, following a substantial amount of preliminary work and discussion with the Commission and its Staff. The application was docketed by the Commission on July 5, 1973, under one option of the Commission's then recently announced standardization policy for nuclear power plants and pursuant to the regulations set forth in Appendix M to 10 C.F.R. Part 50. The Notice of Hearing published in December, 1973 set forth the requirements to be satisfied prior to issuance of the requested Manufacturing License, which requirements were substantially identical to requirements for land-based plants except that required information or analysis relating to site matters were to be predicated upon postulated site parameters to be specified in the application. The Notice of Hearing also appointed an Atomic Safety and Licensing Board, which subsequently developed a public hearing record that is complete except for post-TMI matters. Numerous evidentiary hearings have been held, and the transcript presently extends to almost 8,000 pages. In June 1979 proposed Findings of Fact were submitted to the Atomic Safety and Licensing Board by both Offshore Power Systems and the NRC Regulatory Staff covering all of the health, safety and environmental contentions raised in the hearing. Twenty-four contentions and three issues identified by the Board were heard during the course of the proceeding.

In addition to the hearing process, Offshore Power Systems responses to the post-TMI requirements published in NUREG-0660 were submitted to the Staff for review in July 1980. In this regard, the Manufacturing License application of Offshore Power Systems is one of the most advanced of the entire group of Near-Term Construction Permit and Manufacturing License applications.

Substantial investment has been made in the Floating Nuclear Plant concept. To date 125 million dollars have been invested in the manufacturing facility at Jacksonville, Florida. In

addition, over 2000 man-years of effort and an additional 63 million dollars have been devoted to design and licensing of the Floating Nuclear Plant. These commitments were made in reliance on our understanding that the standards to be applied to the Manufacturing License are the same as those which apply to Construction Permits, with only such distinctions as are set out in 10 C.F.R. Part 50, Appendix M.

Nowhere in Appendix M to 10 C.F.R. Part 50 or in the record of its development is there a requirement, or even a suggestion, that a prerequisite for receipt of a Manufacturing License is a customer or contract for sale of the Floating Nuclear Plant. To segregate Offshore Power Systems from other Near-Term Construction Permit applicants would be to insert in the Commission regulatory regime for Manufacturing Licenses a commercial requirement completely at odds with the Manufacturing License concept and the Commission's prior licensing philosophy.

Under the Manufacturing License concept, Offshore Power Systems was encouraged to license a total plant design for sale and ultimate manufacture. The ability to offer a standardized product of proven viability, completely licensed as to essential safety features and key environmental parameters, is the manufacturer's incentive to make the substantial investment required. To now impose a different standard for an application which is almost completely through the licensing process would greatly damage the concept of standardization and would cast substantial doubt on whether the incentives perceived to result from standardization in fact exist.

Further, Offshore Power Systems believes that failure to apply the proposed standards to the Manufacturing License application will delay a decision on such application to the indefinite future and would be tantamount to a denial of the license.

2. Containment Capability Requirements for Accident-Generated Hydrogen. The requirements in Subsection (3)(V) of the proposed rule are entirely appropriate for application to Floating Nuclear Plants. These requirements in fact are adequate in their provisions to reduce the risk from containment failure caused by hydrogen burning for any of the low pressure containments to a level comparable to that of large, dry containments. This is the case because (1) the assumption of hydrogen production from a 100% clad metal-water reaction is required, (2) containment pressure is required to not exceed the structure's capacity,



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(3) containment structural capacity is required to be such as to withstand a minimum pressure of 45 psig and (4) containment hydrogen control systems are required as necessary to satisfy the foregoing requirements. Design features required by the rule can and will be incorporated into the Floating Nuclear Plant design just as they must be incorporated in the designs of other Near-Term Construction Permit plants.

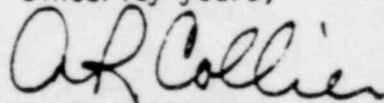
Many of the Near-Term Construction Permit plants utilize containments with volumes and design pressures comparable to the ice condenser containment employed in the Floating Nuclear Plant. It is noteworthy that the Commission recently granted a full power license for one plant with an ice condenser containment and a fuel-load license for another such plant, thereby showing confidence in the capability of ice condenser containments of design similar to the Floating Nuclear Plant to withstand accidents in which the requisite amount of hydrogen is produced. These recent Commission licensing actions were supported by a considerable body of both analytical and experimental evidence applicable to ice condenser containments.

With respect to the ability to increase containment strength, information reported at March, 1981 ACRS meetings by Offshore Power Systems and other Near-Term Construction Permit applicants with low pressure containments indicate that the capability to increase containment strength within the current basic configuration is very nearly the same for the Near-Term Construction Permit plants and the Floating Nuclear Plant; the Floating Nuclear Plant generally having a slight advantage. Thus, both existing and achievable containment strengths are approximately the same for all plants with low pressure, low volume plant containments.

Based on the above arguments, there is no technical reason to exclude the pending Manufacturing License application from the scope of the proposed rule.

Attached are detailed technical comments on the proposed rule. As the Commission is aware, the proposed rule and the inclusion of the Manufacturing License application within the scope of the rule are of vital importance to Offshore Power Systems. We would be pleased to provide any additional information the Commission may deem useful.

Sincerley yours,



A. R. Collier  
President

Attachment

ATTACHMENT:

Comments on Technical Provisions of the Proposed Rule

1. The requirement to assume an amount of hydrogen produced from 100 percent clad-metal-water reaction appears to be very conservative. We believe that this conservatism will be demonstrated during the forthcoming degraded core rulemaking.
2. Requirement (2)(ix) appears to be inconsistent with requirement 3(v)(A) in that the former requires that a hydrogen control system be provided prior to the operating license stage while the latter requires immediate analysis of the containment pressure resulting from hydrogen release. To be consistent, requirement 3(v)(A) should be modified to permit containment analysis to be based on the performance characteristics of existing systems and/or systems to be added during final design.
3. Requirement (2)(ix) requires that a system be capable of "handling" the hydrogen generated in a 100 percent clad-metal-water reaction. The meaning of "handling" should be clarified. Presumably this requirement means that a system must be provided (if and as necessary) to satisfy requirement 3(v).
4. Requirement 3(v) can be interpreted as not allowing preinerting as a hydrogen control measure. This option should be retained.
5. As a result of the concerns expressed in 2, 3 and 4 (and in order to make the text easier to read), we suggest that requirements 3(v)(A) and 3(v)(E) be reworded as follows:
  - (A) Containment integrity will be maintained during an accident that releases a total amount of hydrogen equivalent to that which would be generated from a 100 percent clad-metal-water reaction. For steel containments containment integrity means meeting the requirements of the ASME Boiler and Pressure Vessel Code, Section III, Division 1, Subsubarticle NE-3220, Service Level C Limits, except that evaluation of instability is not required, considering pressure and dead load alone. For concrete containments, containment integrity means meeting the requirements of the ASME Boiler and Pressure Vessel Code, Section III, Division 2, Subsubarticle CC-3720, Factored Load Category, considering pressure load and dead load alone. For either steel or concrete containments, the internal pressure shall be the maximum calculated pressure or 45 psig, whichever is greater. Containment pressure shall be calculated on the basis of uncontrolled hydrogen burning, or, if appropriate, credit may be taken for hydrogen control measures which are, or will be, included in the plant design. Modest deviations from these criteria will be considered by the Staff if good cause is shown by the applicant.
  - (E) Systems for hydrogen control as well as other systems necessary to ensure containment integrity and systems required to reach and maintain safe shutdown shall be capable of performing their safety functions under calculated environmental conditions within containment.

6. While we agree that it is reasonable at this time to provide for possible future penetrations (for a containment vent), it should be acknowledged by NRC that the need for a vent system may not be demonstrated. This would occur, for example, if the probabilistic risk assessment shows either that a filtered vent does not provide significant risk reduction or that other approaches provide greater risk reduction.