



Nuclear Information and Resource Service

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December 13, 1994

Mr. William T. Russell, Director
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U.S. Nuclear Regulatory Commission
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APPEAL OF THE NRC DENIAL TO SUSPEND OYSTER CREEK OPERATING LICENSE

Dear Mr. Russell:

This correspondence references your October 27, 1994 response to the 2.206 petition filed September 19, 1994 by the Nuclear Information and Resource Service (NIRS) and Oyster Creek Nuclear Watch (OCNW), hereinafter referred to as the petitioners. We wish to formally appeal the decision to deny our request to suspend the operating license of Oyster Creek.

In addition, we request a public meeting with NRC in Toms River, NJ to present additional information relevant to the 2.206 petition. The petitioners hereby submit additional evidence relevant to our contentions and the proposed restart of Oyster Creek currently scheduled for December 15, 1994.

The Nuclear Regulatory Commission's (NRC) response offers its justification for the denial of our request for the immediate suspension of Oyster Creek pending action on age-related degradation of reactor vessel internal components and the issue of design deficiencies on GE BWR fuel pool cooling systems. However, we believe the response is inadequate and fails to address concerns central to the petition.

The petitioners are introducing additional information with regard to intergranular stress corrosion cracking (IGSCC) on other safety-class components in the GE Mark I boiling water reactor vessel as it potentially relates to the Oyster Creek nuclear generating station.

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Core Shroud Cracking As A Signal For Cracking of Additional Safety-Class Components

A. NRC RESPONSE-- (1) "OYSTER CREEK HAS INSPECTED CORE SHROUD WELDS AND IS MAKING STRUCTURAL MODIFICATIONS." (2) "INSPECTIONS AND CORRECTIVE ACTIONS RECOMMENDED BY GENERAL ELECTRIC AND THE ASME BOILER AND PRESSURE VESSEL CODE FOR VARIOUS REACTOR INTERNALS HAVE BEEN AND WILL CONTINUE TO BE PERFORMED BY GPU NUCLEAR CORPORATION."

In denying the petitioners request for the suspension of the Oyster Creek operating license because of suspected cracking of safety-class components in the reactor pressure vessel, the NRC claims that the licensee has inspected the core shroud and is making structural modifications to repair cracking that was discovered on circumferential welds around the core shroud. NRC claims that the licensee will continue to inspect and make modifications for various reactor internals.

PETITIONERS CONTENTIONS

The petitioners recognize that GPUN did carry out an inspection of the core shroud as required under Generic Letter 94-03. Indeed, in the course of this enhanced inspection, cracking was discovered on circumferential welds of the core shroud--exactly the reason we demanded such an inspection in the first place.

1) The petitioners contend that once GPUN discovered cracking on the core shroud welds, the licensee has failed to recognize that IGSCC on the core shroud is a signal that cracking could be occurring on additional safety class components, as identified by the Boiling Water Reactor Owners Group in a June 28, 1994 meeting with the NRC. Mr. Russell did not address this issue in his denial of the 2.206 petition requested action.

2) The petitioners contend that cracking on the core shroud should have prompted the enhanced inspection of all safety class component parts in the reactor pressure vessel. The licensee has failed to conduct an enhanced inspection of all safety class components as identified in the original 2.206 petition dated September 19, 1994 to identify whether or not cracking is occurring on additional components. Mr. Russell did not address this issue in his denial of the 2.206 petition. The petitioners additionally contend that NRC is allowing the licensee to proceed on a normal inspection schedule which is unwarranted due to the discovery of core shroud cracking at the reactor.

3) The petitioners contend that recently discovered cracking in the top guide and core plates in foreign BWRs and indications of cracking discovered December 8, 1994 at the New York Power Authority's Fitzpatrick reactor (another older GE Mark I design) underscore our concern that additional safety-class components are degrading due to IGSCC and an intensified inspection of all safety class components is warranted. Both the core plate and top guide are identified as safety class components in NUREG/CR-5754 "Boiling Water Reactor Internals Aging Degradation Study" providing lateral support and guidance to control rod guide tubes and maintaining proper spacing of the upper ends of the fuel assemblies. Both components are made of the type 304 stainless steel identified as susceptible to IGSCC.

As a result of cracking of the core plate and top guide at the Wurgassen KKW boiling water reactor, General Electric issued to all U.S. boiling water reactor operators a Rapid Information Communication Service Information Letter (RICSIL 071) dated November 22, 1994 advising the licensees to inspect their respective core plates and top guides. A full fuel core offload is required to conduct the top guide and core plate inspection.

GPUN did not conduct an enhanced inspection of the core plate and top guide of the Oyster Creek nuclear generating station during the current outage after receiving notification from GE RICSIL 071 dated November 22, 1994. This is in direct contradiction to Mr. Russell's justification for denial of the petitioners requested action as stated in (2) of the October 27, 1994 letter. The petitioners contend that the NRC and the BWROG are taking an unaggressive and piecemeal approach to the problem of age-related degradation of BWR reactor internals. Mr. Russell fails to address this issue in his denial of the petitioner's requested action to suspend the operating license of the Oyster Creek until all safety-class components are inspected and replaced.

4) The petitioners contend that the NRC, the licensee, and the Boiling Water Reactor Owners Group (BWROG) should perform an analysis of the safety impact of multiple component cracking prior to the restart of the Oyster Creek nuclear generating station, which is the oldest operational GE Mark I BWR in the United States and a very likely candidate for being the most susceptible reactor to IGSCC of multiple reactor vessel internal components. The licensee, the NRC, and the BWROG have failed to provide an analysis of the synergistic effects of multiple component cracking of additional safety-class reactor internal components. Mr. Russell did not address this issue in his denial of the 2.206 petition requested action.

REQUESTED ACTION

1) The petitioners request that the NRC suspend the operating license of the Oyster Creek Nuclear Generating Station until the contentions stated above are addressed by actions taken on the part of the NRC and the licensee.

Fuel Pool Cooling Design Deficiencies on Single Unit GE BWRs And Oyster Creek

A. NRC RESPONSE - "UNREALISTIC ASSUMPTIONS" ON TIME-TO-BOIL

In denying the petitioners' request for suspension of the Oyster Creek operating license, the NRC claims that the Oyster Creek irradiated fuel pool would have a longer "time-to-boil," with the potential of exposing and melting high level nuclear waste outside of primary containment, than is currently of concern at the Susquehanna Units 1 and 2.

The NRC denial states: "The staff has conducted an initial assessment of the spent fuel pool cooling issues described in your petition. The staff has determined that the safety significance of the scenario postulated by Messrs. Lochbaum and Prevatte in their 10 CFR 21 Report at the dual-unit Susquehanna Steam Electric Station is low based on the low probability of the concurrent events necessary to sustain a loss of spent fuel pool cooling and the long period of time available for recovery prior to development to an environment sufficiently severe to threaten

equipment operability. The staff believes that this determination of low safety significance is also applicable to Oyster Creek and other single unit sites because, unlike at a dual-unit site, a large decay heat rate associated with a short time to reach boiling conditions is an unrealistic assumption during periods when the unit is operating and fuel in the reactor vessel is subject to a loss-of-coolant accident. Consequently, a substantial amount of time is available to take recovery actions, and correct operator errors or equipment deficiencies. Therefore, although additional systems from adjacent units are not available, the most significant scenarios identified by the staff's review of these issues for Susquehanna, which involve short times to reach boiling conditions, are absent at single unit sites."

PETITIONERS CONTENTIONS

The petitioners contend that this response is inaccurate based on the following documentable points of fact:

- 1) The time-to-boil is independent from the number of reactors units at a site if each unit stores its irradiated fuel in a separate pool and is dictated by the amount of decay heat generation and the volume of water in the fuel pool.
- 2) In fact, NRC documents contradict the staff determination used to deny the petitioner's request. NRC documents available through the Public Document Room referencing the James A. Fitzpatrick nuclear station, a single-unit GE Mark I BWR licensed to the New York Power Authority, dated June 18, 1981, indicates that the time-to-boil for Fitzpatrick following a Loss of Coolant Accident is 8 hours. Additional documentation from the New York Power Authority dated May 31, 1990, again referencing Fitzpatrick, indicate time-to-boil calculations in two cases produced 11.86 hours and 5.36 hours. These time frames are considerably less than what Pennsylvania Power & Light committed to by letter dated June 1, 1994 by stating that they would agree to implement administrative controls to keep the decay heat generation levels in Susquehanna's fuel pools to maintain at least a 25 hour time-to-boil.

The petitioners could find nothing in the NRC response which would support a contention that the time-to-boil at Oyster Creek is longer than the time-to-boil at Susquehanna.

B. NRC RESPONSE - OYSTER CREEK HAS REDUNDANT ON-SITE POWER SYSTEMS

The petitioners are concerned that NRC continues to rely on "low probability" projections for the high risk and consequence to public safety and long term environmental quality as is posed by a fuel pool boiling accident outside of primary containment.

In denying the NRC's request for suspension of the Oyster Creek operating license, NRC rationalizes that the Oyster Creek Final Safety Analysis Report "documents that the spent fuel pool cooling system has redundant components that may be operated from redundant on-site power supplies and is qualified to seismic Class I."

NIRS and OCNW do not take issue with NRC and the licensee on whether or not redundant components and redundant power supplies exist on-site to operate the fuel pool cooling system. At issue is whether or not at least one of those power supplies and components has been qualified as a Class 1E system, or an emergency source that would be maintained during Loss of Coolant Accident/ Loss of Off-site Power and has been qualified to withstand the temperature and humidity postulated under a spent fuel pool boiling accident. In our view, it is meaningless to have redundant components and power supplies if they have not been qualified to operate under emergency conditions.

PETITIONERS' CONTENTIONS

1) The petitioners contend that NRC and the licensee have failed to establish if redundant components and power supplies to the Oyster Creek fuel pool cooling system have been qualified as Class 1E systems.

REQUESTED ACTION

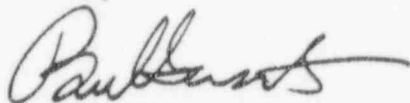
1) The petitioners request that the NRC suspend the operational license of the Oyster Creek Nuclear Generating Station until the above-stated contentions are addressed, including full inspections of all reactor vessel internal components and other safety-related systems susceptible to Intergranular Stress Corrosion Cracking and completion of any and all necessary repairs and modifications.

2) The petitioners request that NRC explain the discrepancy between the stated staff determination of October 27, 1994 and the documented Fitzpatrick calculations as it directly bears on the time-to-boil calculations for other single unit GE BWRs including the Oyster Creek nuclear station.

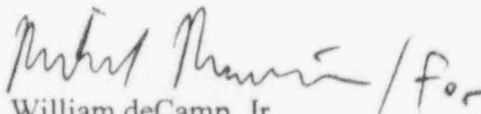
3) The petitioners request that NRC require General Public Utilities Nuclear to produce documents for evaluation of the time-to-boil calculations for the Oyster Creek irradiated fuel pool.

4) The petitioners request that the redundant components which may be powered from on-site power supplies to be used for spent fuel pool cooling as cited in Mr. Russell's October 27, 1994 response be identified as a qualified Class 1E system.

Sincerely,



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