



**GPU Nuclear Corporation**

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Writer's Direct Dial Number:

January 3, 1984

Mr. Dennis M. Crutchfield, Chief  
Operating Reactors Branch #5  
Division of Licensing  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Mr. Crutchfield:

Subject: Oyster Creek Nuclear Generating Station  
Docket No. 50-219  
Status of Unresolved Safety Issues (USI)

Your letter dated July 1, 1982 had requested a status of USI's for Oyster Creek. Based upon discussions with your staff, it was concluded that since this information would be utilized in the conversion of the Oyster Creek license to a Full Term License, it would be advantageous to provide that information closer to the license conversion date.

Now that schedule has been established for the Oyster Creek license conversion, we feel it is appropriate to provide you with a status of USI's at this time. Attachment 1 to this letter provides a status for each USI that may be applicable to Oyster Creek.

If you have any further questions, please contact Mr. James Knubel at (201)299-2264.

Very truly yours,

Peter B. Fiedler  
Vice President and Director  
Oyster Creek

PBF/dam  
Attachment

cc: Administrator  
Region I  
U.S. Nuclear Regulatory Commission  
631 Park Avenue  
King of Prussia, PA 19406

NRC Resident Inspector  
Oyster Creek Nuclear Generating Station  
Forked River, NJ 08731

Sworn and subscribed to before me  
this 3 day of January 1984.

Notary Public

MICHAEL LAGGART  
NOTARY PUBLIC OF NEW JERSEY  
My Commission Expires December 31, 1985

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## Attachment 1

### A-1 Water Hammer

Early in Plant Operations there was a problem with water hammer in the core spray system during surveillance testing. This problem was traced to incomplete filling of the system. A design change was made to add fill pumps which kept the core spray systems filled and pressurized at all times. Since that time, there have been no water hammer occurrences in that system.

In response to water hammer events at other BWR facilities, the operating procedures were changed to prohibit isolation condenser initiations when reactor high water level conditions exist. No water hammer in the isolation condenser has ever occurred at the Oyster Creek plant.

Also because of the configuration of the Oyster Creek Feedwater Spargers and Core Spray Spargers is different than the PWR feedwater spargers that experienced water hammer it is concluded this should not be a concern.

### A-6, A-7, A-39 BWR Mark I Pressure Suppression Containments

Oyster Creek has been in the Mark I long and short term programs since the initial identification of problems with that containment design. Oyster Creek has made significant plant changes to correct the design deficiencies in the Mark I containment. The major changes include: 1) the addition of Y Quenchers on the Electromatic Relief Valve (EMRV) discharge lines, 2) EMRV vacuum breaker replacement, 3) Downcomer bracing, 4) Downcomer truncation, 5) Mid-bay saddles prior to startup from the present refueling outage, 6) The strengthening of the torus and more.

In addition, a plant unique analysis was submitted on September 24, 1982. All other minor modifications will be completed during the next refueling outage which is in conformance with the NRC order dated January 19, 1982.

### A-9 Anticipated Transients Without Scram (ATWS)

The Oyster Creek facility is considered less susceptible to the consequences of an ATWS event than most other BWRs because the plant has the safety valve capacity to relieve 100% steam flow. In addition, the Oyster Creek plant was modified in the mid 1970s to incorporate a recirculation pump trip on parameters indicative of an ATWS event. Oyster Creek has also responded to Generic Letter 83-28 in the Salem ATWS event and plans to upgrade its administrative controls over the next several years in order to be in full compliance with the requirements established in that Generic Letter.

A-10 BWR Nozzle Cracking

NUREG 0619 was issued on this subject in November 1980. Oyster Creek did replace the feedwater spargers during the 1978 refueling outage and at that time the stainless steel cladding was removed from the feedwater nozzles. Oyster Creek is now in full compliance with NUREG 0619.

This item is considered resolved.

A-11 Reactor Vessel Material Toughness

Generic Letter 82-26 establishes the requirements to be met to consider this subject resolved. Oyster Creek is in the process of meeting these requirements. In order to be able to answer the Generic Letter, the #2 reactor vessel surveillance capsule is being removed during the current refueling outage and the test results are expected in mid-1984 from the laboratory.

A-17 Systems Interactions in Nuclear Power Plants

The status of development of the action plan by the NRC for resolving this issue is such that no specific problems or solutions have yet been identified. However, in 1979, in response to I&E notice 79-22, an evaluation of potential interaction between non-safety and safety systems was conducted. This evaluation consisted of plant walk-throughs to identify any potential areas of concern. None were observed. Based on the current status of this issue, it is concluded that it is being adequately addressed for Oyster Creek at this time.

A-24 Environmental Qualifications of Safety-Related Electrical Equipment

With the issuance of the final rule on this subject, this subject is considered resolved. Oyster Creek will meet the requirements and schedules established by 10CFR50.49. Prior to the final rule, Oyster Creek has made several changes in equipment in order to ensure that safety related electrical equipment will function in harsh environments. This equipment includes several motor operators inside containment, several solenoid valves inside containment and other equipment.

A-31 Residual Heat Removal Requirements

SEP topics VIII-3 and V-10.13 utilized the Standard Review Plan (SRP) Section 5.4.7 as part of the basis for evaluating this subject. Based upon the SEP review of this topic and the Oyster Creek commitment to upgrade its procedures in this area, it is concluded that subject is adequately addressed.

#### A-36 Control of Heavy Loads Near Spent Fuel

An NRC Generic Letter transmitted the requirements of NUREG 0612 to Oyster Creek. Oyster Creek has responded on September 22, 1981 and February 18, 1983 to the NRC's Generic Letter. These responses satisfy the requirements for Phase I of heavy loads. Oyster Creek is preparing its response to Phase II and expects to respond in early 1984. As a result of this issue, there have been changes in the plant procedures and crane testing requirements.

#### A-40 Seismic Design Criteria

As a result of the SEP review done during topics II-4.A, II-4.B, II-4.C and III-6, new site-specific seismic inputs were generating for Oyster Creek. As a result of the SEP evaluation of this topic it is concluded that this issue is resolved for Oyster Creek.

#### A-42 Pipe Cracks in Boiling Water Reactors

Based on problems discovered at a BWR, the NRC issued I&E Bulletin No. 82-03. Oyster Creek was covered by that bulletin and as such has undergone a major inspection of the plants stainless steel piping. In response to the bulletin, GPUN personnel, as well as its NDE contractors, were trained and qualified to new techniques that were demonstrated to be capable of detecting Intergranular Stress Corrosion Cracking (IGSCC). Inspection procedures were also upgraded to be compatible with the more sensitive techniques. A large sample of the recirculation system piping, as well as other smaller diameter piping, was inspected. Also a Penetrant Test (PT) was done on three accessible welds that have ultrasonic test (UT) reflectors. No IGSCC was found. These results were documented to the NRC on September 8, 1983. It is concluded this issue is being adequately addressed at this time.

#### A-43 Containment Emergency Sump Reliability

The safety problem identified by this topic primarily related to Pressurized Water Reactor Containment. The Oyster Creek facility utilizes a Mark I suppression pool containment. As such, the torus, with a minimum water volume of 82,000 cubic feet, provides a large reliable water source for ECCS Systems. It is concluded that based on the Mark I containment design, this issue is of minimal significance for Oyster Creek.

#### A-44 Station Blackout

The NRC Generic Letter dated February 25, 1981 established requirements for upgrading procedures and training. Oyster Creek has incorporated many of the requirements established by the Generic Letter and is

committed to have addressed them all prior to startup from the current refueling outage. In addition to the Generic Letter, Oyster Creek has made other facility changes that reduce the likelihood and consequences of a station blackout event. In 1978 a redundant Class 1E 125 vdc battery system was installed. This combined with the use of isolation condensers as a heat sink allow the facility to stay in hot shutdown for a considerable length of time without the need for any AC electric power. Also the SEP review and proposed corrective actions for Topic VIII-2 "Onsite Emergency Power Systems" and Topic VIII 3.B "OC Power System Bus Voltage Monitoring and Annunciation" greatly decrease the likelihood of a blackout event and improve the plant response to such an event if it should occur.

Based on the above, it is concluded that Oyster Creek is adequately protected against such an occurrence.

#### A-45 Shutdown Decay Heat Removal Requirements

This issue was originally identified as a problem with Pressurized Water Reactors. The NRC staff has not yet established whether or not a problem exists with Boiling Water Reactors. The Oyster Creek plant has two separate isolation condensers and these combined with the other diverse and redundant paths to safe shutdown identified during the SEP review lead to the conclusion that this is not a major safety issue for Oyster Creek.

#### A-46 Seismic Qualification of Equipment in Operating Plants

Oyster Creek is participating in the Seismic Qualification Utilities Group (SQUG). This group has completed a pilot program which looked at a number of industrial facilities that have experienced significant earthquakes. As a result of this program, it was demonstrated that plants are not susceptible to earthquake damage if equipment is held down properly. We will continue with this effort and based on the results to date, conclude that Oyster Creek is adequately addressing this issue.

#### A-47 Safety Implications of Control Systems

This issue is still in the early stage of definition by the NRC. Whether or not a problem exists, and if it does how significant it is, has not yet been established. Based upon the current status of this, it is concluded that it is being adequately addressed for Oyster Creek at this time.

#### A-48 Hydrogen Control Measures and Effects of Hydrogen Burns on Safety Equipment

The Oyster Creek containment is an inerted Mark I containment. Since oxygen concentrations are maintained below the combustible limit by inerting with nitrogen, it is concluded that Oyster Creek has adequately addressed this issue.