UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 168

TO FACILITY OPERATING LICENSE NO. DPR-16

GPU NUCLEAR CORPORATION AND
JERSEY CENTRAL POWER & LIGHT COMPANY

OYSTER CREEK NUCLEAR GENERATING STATION

DOCKET NO. 50-219

1.0 INTRODUCTION

By letter dated December 16, 1993, GPU Nuclear Corporation (the licensee) requested an amendment to Facility Operating License No. DPR-16. The proposed amendment would change certain Oyster Creek Technical Specifications (TS) relating to secondary containment piping penetration isolation requirements.

2.0 DISCUSSION AND EVALUATION

2.1 Secondary Containment Description

The Oyster Creek reactor building (RB) completely encloses the reactor and its primary containment. During those reactor operational modes which require primary integrity, the RB serves as a secondary containment for control of fission products which could leak from the primary containment. During those operational modes for which primary containment integrity is impractical and accidents involving containment pressurization are unlikely (e.g., refueling), the RB serves as a primary containment.

The RB is provided with a ventilation system (RBVS) system for heating or cooling during normal (non-accident) conditions. The RBVS contains air supply and exhaust ducts which penetrate the RB walls. The supply fans are located outside of the RB and supply air to the RB via two supply duct penetrations. Exhaust air leaves the RB via a single duct penetration. Redundant automatic isolation dampers (butterfly valves) are provided in each duct at each RB penetration to automatically isolate the RB under accident conditions. Under accident conditions, the Standby Gas Treatment System (SGTS) will automatically start, exhausting the RB to the stack to provide a filtered, elevated release of the contaminated RB atmosphere. The RB is designed for a maximum inleakage rate of 200% volume/day. Failure of the butterfly valves to close tightly could result in excessive RB in-leakage exceeding the capability of the SGTS and thereby causing exfiltration or ground-level, unfiltered release of fission products during an accident.

2.2 Changes to Technical Specifications

2.2.1 Definition of Secondary Containment Integrity

The Technical Specifications provide a high degree of assurance that the secondary containment will be operable as a fission product control system under accident conditions. TS 1.14 defines three specific requirements necessary for secondary containment integrity. The conditions to be met include:

A. At least one door at each access opening is closed.

B. The standby gas treatment system is operable.

C. All reactor building ventilation system automatic isolation valves are operable or are secured in the closed position.

The proposed amendment would change the last requirement to read "All automatic secondary containment isolation valves are operable or are secured in the closed position." This change would provide consistency in terminology and does not change the scope of the TS or any specific Limiting Conditions for Operation (LCOs) or Surveillance Requirements (SRs). Substitution of the term "secondary containment isolation valves" for "reactor building isolation valves" is acceptable, since, at Oyster Creek, the secondary containment boundaries and RB boundaries coincide. The TS 1.14 change is therefore acceptable.

2.2.2 Completion times for repair of valves or isolation of penetration

The more significant of the changes proposed in the licensee's application are intended to permit continued operations when one or more of the butterfly isolation valves is inoperable but integrity of the associated penetration is assured by virtue of another closure device which is not subject to failure to automatically close on demand. TS 3.5.B currently requires that upon accidental loss of secondary containment integrity (i.e., conditions A, B and C above not met), the licensee must restore secondary containment integrity within 4 hours, or:

During power operation:

(1) Have the reactor mode switch in the shutdown mode position within the following 24 hours.

(2) Cease all work on the reactor or its connected systems in the reactor building which could result in inadvertent releases of radioactive materials.

(3) Cease all operations in, above or around the Spent Fuel Storage Pool that could cause release of radioactive materials.

During refueling:

(1) Cease fuel handling operations or activities which could reduce the shutdown margin (excluding reactor coolant temperature changes).

(2) Cease all work on the reactor or its connected systems in the reactor building which could result in the inadvertent releases of radioactive materials.

(3) Cease all operations in, above or around the Spent Fuel Storage Pool that could cause release of radioactive materials.

The above (currently applicable) TS do not acknowledge the use of a single deenergized or locked-closed valve as being sufficient for integrity of a secondary containment penetration. Should a valve become jammed open, the above action requirements must be followed. The amendment would revise the above requirements to insert a provision that, after expiration of the 4 hour period with one or more of the automatic secondary containment isolation valves inoperable, the licensee must:

> Maintain at least one automatic secondary containment isolation valve in each affected penetration OPERABLE, and
>
> Within 8 hours restore the inoperable automatic secondary containment isolation valves(s) to OPERABLE status or isolate each affected penetration with at least one valve secured in the closed position.

The proposed change would provide a 4-hour completion time for the case of two inoperable (open and incapable of automatic closure) valves in a penetration, and an 8-hour completion time for the case of a single inoperable valve. After expiration of these completion times the affected penetration(s) must be isolated with at least one secured valve. When isolated with a secured (i.e., deenergized) valve, the penetration is not subject to loss of leaktightness due to equipment failure or spurious signals. Thus operations can be continued until repairs can be completed.

The staff has evaluated the potential effects of the proposed TS changes using the STS (Standard Technical Specifications General Electric Plants, BWR/4, NUREG-1433, September 1992) as guidance. The STS specify an 8-hour completion time for a single inoperable secondary containment isolation valve in one or

more penetrations, and a 4-hour completion time for both secondary containment isolation valves inoperable in one or more penetrations. The STS also permit continued operations with no time limit, with penetration closure provided by a single closed, deactivated valve. Based on the STS guidance, and a determination that there are no unique or unusual features of the Oyster Creek design that would preclude use of the STS as guidance, the proposed TS changes are acceptable.

The STS also specify that when a closed and deenergized valve is used to isolate a penetration, the valve position is to be verified every 31 days. The purpose of this additional requirement is to provide added assurance that the deenergized valve is indeed closed, considering that fact that the valve's control room position indication may also be inoperable. The licensee has not explicitly included such a requirement with the proposed changes. The staff discussed this with licensee personnel, and was informed that at Oyster Creek, the RBVS secondary containment isolation valves are coincidentally tested monthly for leak tightness and proper positioning as part of the SGTS surveillance test program. The monthly SGTS surveillance test involves closure of the RBVS valves while the SGTS draws a negative pressure on the secondary containment. The monthly SGTS operability test would reveal an improperly positioned valve. Since the SGTS test interval coincides with the desired interval for verification of proper closure of isolated penetrations, the SGTS surveillance test provides a high degree of assurance of proper secondary containment isolation valve positioning. Additionally, the licensee's valve tagout administrative procedures include logging of inoperable valves, and the use of red tags at the valve and in the control room to continuously identify valves that are inoperable. The use of such controls provides added assurance that closed and deenergized (secured) valves remain in the correct position. The proposed changes are thus acceptable notwithstanding the omission of the standard 30-day verification requirement.

2.2.3 Changes to Bases

The proposed amendment would add a paragraph to the BASES describing permissible conditions for removal of an RBVS secondary containment isolation valve. The redundant isolation valves in the two supply duct penetrations are located inside the RB. The redundant isolation valves in the single exhaust duct penetration are located outside the RB. Due to this configuration, it is possible to remove the downstream isolation valves, if the upstream valves are closed, without loss of secondary containment integrity. Removal of an isolation valve under these conditions is consistent with the Technical Specifications operability requirements and is acceptable.

The staff has reviewed the proposed Technical Specifications changes relating to (a) the definition of secondary integrity, (b) the completion time for actions required when one or more secondary containment piping penetration isolation valves is inoperable, and (c) the removal of an RBVS isolation valve. The staff has determined that the proposed changes are acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New Jersey State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (59 FR 4938). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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