ATTACHMENT 2

Consumers Power Company
Palisades Plant
Docket 50-255

PROPOSED TECHNICAL SPECIFICATION PAGE
CHANGES

September 1, 1987

6 Pages

3.13 (Deleted)

3.21 MOVEMENT OF HEAVY LOADS

Applicability

Applies to limitations in the movement of heavy loads over the 649' level of the auxiliary building and inside containment. A heavy load is a load, other than a fuel assembly, which weighs more than 1300 lbs.

Objective

To minimize the probability of and the consequences of a heavy load drop.

Specifications

3.21.1 Inside Containment

a. Heavy loads shall not be moved over the primary coolant system if the temperature of the coolant or the steam in the pressurizer exceeds 225°F.

b. Heavy loads shall not be moved unless the potential for a load drop is extremely small as defined by Generic Letter 85-11 or an evaluation in compliance with section 5.1 of NUREG-0612 has been completed.

3.21 MOVEMENT OF HEAVY LOADS (Continued)

3.21.2 Over the 649' Level of the Auxiliary Building

The surface of the floor adjacent to the spent fuel pool is at the 649' level of the auxiliary building. The spent fuel pool is made up of two (2) zones. They are the main pool zone and the north tilt pit zone.

a. Heavy loads shall not be moved over fuel stored in the main pool zone.

b. Heavy loads shall not be moved over areas of the main pool zone which do not contain fuel unless the fuel stored in the main pool zone has decayed a minimum of 30 days when the charcoal filter is operating, or the fuel stored in the main pool zone has decayed a minimum of 90 days when the charcoal filter is not operating.

c. Heavy loads shall not be moved over the north tilt pit zone unless the fuel stored in the north tilt pit zone has decayed a minimum of 22 days when the charcoal filter is operating; or, the fuel in the north tilt pit zone has decayed a minimum of 77 days when the charcoal filter is not operating.

d. Heavy loads shall not be moved over the 649' level of the auxiliary building unless:

   (1) The fuel storage building crane interlocks are operable or they are bypassed and the crane is under administrative control of a supervisor, and

   (2) No fuel handling operations are in progress.

e. Loads weighing more than 25 tons shall not be moved over the cask laydown area of the main pool zone.

f. Heavy loads shall not be moved unless the potential for a load drop is extremely small as defined by Generic Letter 85-11 or an evaluation in compliance with section 5.1 of NUREG-0612 has been completed.

Bases

Reference (7) defines a heavy load as a load which weighs more than a fuel assembly and its handling tool. The lightest Palisades fuel assemblies weigh approximately 1298 lbs and the heaviest weigh approximately 1375 lbs. The handling tool weighs 60-70 lbs. For conservatism, loads weighing more than 1300 lbs, except for fuel assemblies, are classified as heavy loads.

Heavy loads are not allowed over the pressurized primary coolant system to preclude dropping objects which could rupture the boundary of the primary coolant system allowing loss of coolant and overheating of the core.

3.21 MOVEMENT OF HEAVY LOADS (Continued)

Bases (Continued)

Prohibiting movement of heavy loads over fuel stored in the main pool zone minimizes the criticality and radiological effects of a load drop.

Heavy loads are allowed over the fuel stored in the north tilt pit zone because the maximum number of fuel bundles which can be stored in that zone is relatively small and the north tilt pit lies under the only possible safe load path for moving heavy loads into and out of containment without passing over the main pool zone.

Requiring that the spent fuel pool crane interlocks are operable ensures that heavy loads or the unloaded crane will not drift over or be inadvertently moved over fuel stored in the main pool area.

Specific decay times with and without the charcoal filters operating are necessary to ensure that heavy loads are moved within analyzed conditions.

The charcoal filter is operating when at least one Fuel Handling Area exhaust fan is drawing suction through the charcoal filter and the Fuel Handling Area ventilation system is in the refueling mode.

Assuring that no fuel handling operations are in progress while heavy loads are being moved allows operator attention to be focused on the heavy load movement.

The objectives of the Guidelines of Section 5.1 of NUREG-0612 are to assure that (1) the potential for a load drop is extremely small, or (2) for each area addressed, the following evaluation criteria are satisfied:

(1) Releases of radioactive material that may result from damage to spent fuel based on calculations involving accidental dropping of a postulated heavy load produce doses that are well within 10 CFR Part 100 limits of 300 rem thyroid and 25 rem whole body;

(2) Damage to fuel and fuel storage racks based on calculations involving accidental dropping of a postulated heavy load does not result in a configuration of the fuel such that k_{eff} is larger than 0.95;

(3) Damage to the reactor vessel or the spent fuel pool based on calculations of damage following accidental dropping of a postulated heavy load is limited so as not to result in water leakage that could uncover the fuel, (makeup water provided to overcome leakage shall be from a borated source of adequate concentration); and

Bases (Continued)

(4) Damage to equipment in redundant or dual safe shutdown paths, based on caluclations assuming the accidental dropping of a postulated heavy load, will be limited so as not to result in loss of required safe shutdown functions.

Generic Letter 85-11 defines the potential for a heavy load drop as extremely small when a heavy load is moved in compliance with the Guidelines of section 5.1.1 of NUREG-0612.

References

(1) Palisades Plant Evaluation of Postulated Cask Drop Accidents by Bechtel Associates Professional Corporation, August 1974.

(2) Palisades Plant Final Safety Analysis Report - Appendix J - Evaluation of Postulated Cask Drop Accidents, submitted to the NRC on August 9, 1974. (Structural Analysis only)

(3) Letter dated January 16, 1978 from D P Hoffman, CPC to Director NRR, entitled "Palisades Plant - Movement of Shielded Shipping Cask."

(4) Letter dated November 1, 1976 from D A Bixel, CPC, to Director NRR entitled "Spent Fuel Pool Modifications."

(5) SER supporting License Amendment No. 35 dated February 8, 1978.

(6) SER supporting License Amendment No. 81 dated May 22, 1981.

(7) NUREG-0612 - Control of Heavy Loads in Nuclear Power Plants.

(8) Safety Analysis Report (Rev. 1) dated October 16, 1986 attached to letter dated October 16, 1986 from K W Berry, CPC, to NRC.

(9) Generic Letter 85-11 dated June 28, 1985.

5.4.2 Spent Fuel Storage

a. Irradiated fuel bundles will be stored, prior to off-site shipment in the stainless steel-lined spent fuel pool.

b. (Deleted)

c. The spent fuel storage pool and spare (north) tilt pit are divided into two regions identified as Region I and Region II as illustrated in Figure 5.4-1. Region I racks are designed and shall be maintained with a nominal 10.25" center-to-center distance between fuel assemblies with the exception of the single Type E rack which has a nominal 11.25" center-to-center distance between fuel assemblies. The Region I spent fuel storage racks are designed such that fuel having a maximum U-235 loading of 3.27 w/o of U-235 placed in the racks would result in a K_{eff} equivalent to ≤ 0.95 when flooded with unborated water. The K_{eff} of ≤ 0.95 includes a conservative allowance for uncertainties.

d. Region II racks have a 9.17 inch center-to-center spacing. Because of this smaller spacing, strict controls are employed to evaluate burnup of the fuel assembly prior to its placement in Region II cell locations. Upon determination that the fuel assembly meets the burnup requirements of Table 5.4-1, placement in a Region II cell is authorized. These positive controls assure the fuel enrichment limits assumed in the safety analyses will not be exceeded.

e. After installation of the two-region high density spent fuel racks, the maximum loading for fuel assemblies in the spent fuel racks is 3.27 w/o of U-235.

f. The minimum spent fuel pool water boron concentration shall be 1720 ppm. Boron concentration shall be verified at least once monthly.

g. The spent fuel racks are designed as a Class I structure.

h. (Deleted)

i. Storage in Region II of the spent fuel pool and spare (north) tilt pit shall be restricted by burnup and enrichment limits specified in Table 5.4-1.

NOTE: Until needed for fuel storage, one Region II rack in the northeast corner of the spent fuel pool may be removed and replaced with the cask anti-tipping device.

References

FSAR Update Chapter 5
FSAR Update Chapter 9

ATTACHMENT 3

Consumers Power Company
Palisades Plant
Docket 50-255

ALTERNATE INTERIM TECHNICAL SPECIFICATION PAGE CHANGES

MOVEMENT OF A SHIELDED SHIPPING CASK IN THE FUEL POOL BUILDING

September 1, 1987

2 Pages

3.21 MOVEMENT OF SHIELDED SHIPPING CASK IN FUEL HANDLING AREAS

Applicability

Applies to limitations in the movement of a right circular cylinder, weighing 12 tons and approximately 5 feet high and 3-1/2 feet in diameter, in fuel handling areas. The spent fuel pool is made up of two zones, the main pool zone and the north tilt pit zone.

Objective

To minimize the possibility of a cask drop or damage to safety-related equipment during the movement of a shielded cask in the fuel handling building and in containment.

Specifications

3.21.1 The following conditions shall be satisfied during any movement of the shielded shipping cask identified in 3.21.

a. The cask movement shall be limited to areas outside the periphery of the main pool zone of the spent fuel pool except for the cask loading area. The vertical clearance between the cask bottom and the operating floor or any obstructing structure shall not exceed 6 inches.

b. The cask shall not be moved any closer to the main pool zone of the spent fuel pool than the height of the cask (about 60") except when moving over the tilt pits or to and over the cask loading area. While being moved over the tilt pits, the side of the cask nearest the spent fuel pool must be maintained to the west of the east boundary of the tilt pits.

c. If fuel is stored in the north tilt pit, movement of the cask over the tilt pit shall be allowed provided the fuel has decayed for a minimum of 22 days when the charcoal filter of the spent fuel building ventilation system is operating and 77 days when the charcoal filter is not operating.

d. Movement of the cask over the cask loading area shall be allowed provided the fuel stored in the main pool zone has decayed for a minimum of 30 days when the charcoal filter of the spent fuel building ventilation system is operating and 90 days when the charcoal filter is not operating.

e. Cask movement to or over the cask loading area shall be prohibited when fuel is stored in the cask loading area.

f. No fuel handling operations are in progress.

Bases

The potential damage to spent fuel will be diminished during the allowed movement of the 12-ton shielded shipping cask by assuring that no fuel handling operations are in progress during cask movement (thus ensuring operator attention) and by restricting movement over the north tilt pit until fuel stored in that location has decayed sufficiently to adequately reduce the potential consequences of any hypothetical accident. Cask movement over the cask loading area is permitted when no fuel is stored in that area because compliance with the intent of the guidelines of NUREG-0612 makes the probability of a load drop extremely small (Reference 1).

Specific decay times with and without the charcoal filter operating are necessary to ensure that the cask is moved within analyzed conditions (References 2 and 3)

References

(1) Generic Letter 85-11 dated June 28, 1985.
(2) Letter and Safety Analysis, DABixel to ASchwencer dated Novmeber 1, 1976
(3) Safety Evaluation Supporting Amendment No 81, dated May 22, 1984