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DOCKET 50-255 - LICENSE DPR-20 - PALISADES PLANT - RESPONSE TO INSPECTION REPORT 87-030

NRC Inspection Report 87030 dated, January 5, 1988 transmitted two violations regarding the failure to comply with the established solid radioactive waste process control program and applicable regulations of the Department of Transportation in 49 CFR Parts 170-189. The following is Consumers Power Company's response to these violations.

Violation (255/87030-02 (DPR))

Technical Specification 3.24.7.1 requires that the solid radwaste system be operated in accordance with the Process Control Program to meet shipping and burial ground requirements. The Process Control Program, in part, specifies the procedurally required process temperature profiles for waste feed zones and a minimum solid radwaste system temperature and requires that the end product be a monolithic, free-standing solid with no free liquid.

Contrary to the above, on September 30, 1987 at the Barnwell waste burial facility, a State of South Carolina inspector found that Drum No 184 of exclusive use radioactive waste, Shipment No 0987-187, shipped from Palisades to Barnwell, classified as radioactive material, LSA, N.O.S and described as liquid solidified with bitumen packaged in 21 steel drums, was not a free-standing monolith and contained liquid in excess of regulatory limits. Drum No 183 (same batch as Drum No 184) which was in storage on-site, was also found to contain excessive liquid (approximately two liters). Licensee followup investigation of solid radwaste process records for these drums found that waste feed zone temperatures were 60° to 100°F lower than procedural requirements and 15° to 70°F lower than the minimum temperature allowed by the Process Control Program.

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Corrective Actions Taken And Results Achieved

On September 10, 1987, 21 drums (55 gallon capacity) of bitumen (asphalt) solidified evaporator concentrates were shipped to the Barnwell Waste Management facility for burial. Upon arrival at the facility, a representative sample lot of drums is tested to verify proper solidification. Testing consists of puncturing a drum four times at approximately 90 degree internals, one inch above the bottom of the drum. 2

On September 28, 1987, a representative of the Barnwell facility informed Plant personnel that drum DWB-585-184 had failed to solidify properly during solidification. During the initial puncture approximately 750 milliliters of liquid drained from the drum. Subsequent punctures revealed no additional liquid, however, the asphalt appeared to be wet. All other drums tested at the Barnwell facility were properly solidified.

Shortly after being notified of the incident, personnel from the Plant met with Barnwell representatives to review the incident. While at the facility, drum DWB-585-186 (one of three drums, including DWB-585-183 and DWB-585-184 to be filled in a continuous run) was tested and appeared to have properly solidified. Drum 184 was shipped back to the Plant. During destructive testing of drums 183 and 184 at Palisades, liquid and non-solidified asphalt were identified.

During an investigation of the solidification failure, it was identified that during the time drums 183, 184 and 186 were filled, Volume Reduction System (VRS) operators manually actuated an additional heating boiler bank to increase extruder barrel pressure and temperature. The additional boiler was added after drum 183 was filled and approximately two-thirds of drum 184 had been filled. A further review of VRS processing logs revealed that extruder barrel temperature profiles were below limits presented in both Standard Operating Procedures and the Process Control Program.

In order to preclude recurrence, extruder temperature profile requirements were added to VRS Processing Sheets completed during VRS operation and to signs located next to extruder barrel temperature controllers on the VRS control panel. Also, procedures governing VRS operation were revised to require Plant Operations Support and Radiological Materials Control (RMC) Supervisors review and sign-off of VRS Processing Sheets prior to shipment.

Corrective Action To Be Taken To Avoid Further Noncompliance

RMC personnel are meeting with Operations Department personnel who operate the VRS, to review this incident and to emphasize the need to maintain process control parameters. Also, as a preliminary solidification test, the next 100 drums of processed radioactive waste will be inverted to verify that no liquid is present prior to shipment for burial. This process was utilized prior to destructive testing of drum 183 and proved to be effective.

Date When Full Compliance Will Be Achieved

Operations personnel discussions will be completed by March 1, 1988. The preliminary solidification tests will continue until 100 drums of solidified radioactive waste are checked.

Violation (255/87030-03 (DPR))

10 CFR 71.5 prohibits transport of any licensed materials outside the confines of a plant or other place of use or delivery of licensed material to a carrier for transport unless the licensee complies with applicable regulations of the Department of Transportation in 49 CFR Parts 170-189.

a. 49 CFR 177.817(a) required that a carrier not transport hazardous material, including radioactive material, unless it is accompanied by a shipping paper prepared in accordance with Sections 172.200-203.

Contrary to the above, in September 1987, the licensee, acting as a carrier, transported radioactive material without shipping papers.

b. 49 CFR 173.475(b) requires that before each shipment of any radioactive materials package, the shipper ensures by examination or appropriate test, that the package is in unimpaired physical condition, except for superficial marks.

Contrary to the above, on March 9, 1987 at the Richland waste burial facility, a State of Washington inspector found that Box No BTC686-045 of Radioactive Material LSA Shipment No 87-009-S, shipped from Palisades to Richland, had a small crack that leaked a small amount of dry nonradioactive absorbent material.

Corrective Actions Taken And Results Achieved

a. On September 14, 15 and 16, 1987 Palisades Plant personnel transported 53 level gauges, each containing a sealed source of Cs-137, from CPCo's Campbell Plant to the Palisades Plant. The gauges were transported in properly labeled 55 gallon drums in one vehicle while followed by another vehicle with a qualified Plant Health Physics Technician present, however, shipping papers were not prepared. The failure to complete shipping papers for the source transfer was due to RMC personnel believing that by having the sources in control of the Health Physics Technician the requirements of 49 CFR 177.817(a) did not apply.

Health Physics Procedure 6.20, "Radioactive Material Shipments - Nonwaste" has been revised to require that shipping papers be prepared on any occasion when radioactive material is transported from its licensed site.

b. On March 4, 1987 Radioactive Waste Shipment 87-009-S was sent to the U S Ecology burial site in Richland, Washington. Upon arrival, a State of Washington inspector identified that Box BTC686-045 had developed a small (approximately one inch) crack on a bottom welded seam and approximately

OC0288-0034-NL02

3

> one pint of non-radioactive absorbent material had spilled from the crack. The type B-25 box contained low specific activity (LSA) solid waste.

> Consumers Power and involved personnel from both U S Ecology and the State of Washington believed the welded seam failed during transportation and could be classified as a "fatigue failure".

Since 1981, the Palisades Plant has successfully packaged and shipped 648 metal boxes for disposal all produced by the same manufacturer as the recently failed box. During discussions with representatives from the Richland, Washington and Barnwell, South Carolina burial sites, both indicated they could not recall any other similar box failures, however, the Radiological Safety Officer for the burial site in Beatty, Nevada indicated he has seen several bottom weld seam failures in the last two years.

The box manufacturer was then contacted in regard to the failure. The manufacturers representative indicated that type B-25 box has recently been modified by replacing seamed sides with a wrapped corner. However, the representative stated this improvement was made to allow a higher stress factor during compaction, and was not due to problems incurred during transportation.

Existing Health Physics Procedures governing the shipment of radioactive materials were reviewed to ensure compliance with 49 CFR 173.475, "Quality Control Requirements Prior to Each Shipment of Radioactive Materials". This review indicated that applicable quality control requirements are present in existing procedures. These requirements pertain to radiation and contamination levels, packaging methodologies, physical inspection of closure devices and adequacy of packaging. Criterion to be evaluated during container inspection to assure proper packing are included in the Health Physics Procedure 6.18, "Low Level Radwaste Packaging". This procedure also requires sign-offs by personnel from both the RMC and Quality Control groups after packaging and prior to shipment. In regard to shipment 87-009-S, all required signatures were present and additional inspection was completed by the RMC supervisor.

In that existing procedures are felt to be adequate, shipping boxes are being modified by the manufacturer and the failure can reasonable be classified as a "fatigue failure", no further corrective actions are warranted at this time.

Corrective Actions To Be Taken To Avoid Further Noncompliance

- a. All Plant personnel involved in the transfer of radioactive material will be made aware of the procedural revisions requiring shipping paper preparation.
- b. No further corrective actions are planned at this time.

OC0288-0034-NL02

Date When Full Compliance Will Be Achieved

a. Full compliance will be achieved March 1, 1988.

5

b. Full compliance has been achieved.

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