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September 20, 1996
Fort St. Vrain
P-96083

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Docket No. 50-267

SUBJECT: **QUARTERLY SUBMITTAL OF THE 10 CFR 50.59 REPORT OF CHANGES, TESTS AND EXPERIMENTS FOR FORT ST. VRAIN DECOMMISSIONING**

REFERENCE: NRC Letter dated November 23, 1992, Erickson to Crawford (G-92244)

Gentlemen:

This letter transmits the quarterly 10 CFR 50.59 Report of Changes, Tests, and Experiments affecting Decommissioning of the Fort St. Vrain (FSV) Nuclear Station. The attached report includes a description of each change, test and experiment as well as a summary of the safety evaluation. This report covers the period of June 1, 1996 through August 31, 1996.

This report is being submitted pursuant to Condition (b)(2) of the "Order Approving Decommissioning Plan and Authorizing Decommissioning of Facility", transmitted in the referenced letter, which states the following:

> "The licensee shall submit, as specified in 10 CFR 50.4, a report containing a brief description of any changes, tests and experiments, including a summary of the safety evaluation of each. The report must be submitted quarterly."

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If you have any questions concerning this report, please contact Mr. M. H. Holmes at (303) 620-1701.

Sincerely,

Frederick J. Borst

Frederick J. Borst
Decommissioning Program Director

FJB/JRJ

Attachment

cc: Mr. Michael F. Weber, Chief
Decommissioning and Regulatory
Issues Branch

Regional Administrator, Region IV

Mr. Robert M. Quillin, Director
Radiation Control Division
Colorado Department of Public Health and Environment

June 1996
QUARTERLY 10 CFR 50.59 REPORT OF CHANGES, TESTS AND EXPERIMENTS FOR FSV DECOMMISSIONING

Background:

The following is a brief discussion of 10 CFR 50.59 changes to the Fort St. Vrain (FSV) facility or procedures as described in the Decommissioning Plan (DP) and tests and experiments not described in the DP, in the time period from June 1, 1996 through August 31, 1996.

The quarterly decommissioning reports are submitted pursuant to Paragraph (b)(2) of the FSV Decommissioning Order (issued in NRC letter dated November 23, 1992, Erickson to Crawford), which states:

> "The licensee shall submit, as specified in 10 CFR 50.4, a report containing a brief description of any changes, tests and experiments, including a summary of the safety evaluation of each. The report must be submitted quarterly."

Changes to the FSV Facility or its Procedures as Described in the Decommissioning Plan

The only change requiring a 10 CFR 50.59 safety evaluation in the past quarter involved the establishment of drying stations for the evaporation of residual waste water, described below. No tests or experiments were conducted this reporting period that are not described in the DP.

1. Establishment of Water Evaporation Stations

Two proposed drying stations were assessed for the evaporation of residual waste water following the dismantlement of the Radioactive Liquid Waste System and the Reactor Building Drain System. These were Building 14, located northeast of the Reactor Building, and the New Fuel Storage Building, located east of the Reactor Building. Plans called for the drying station in Building 14 to have the capacity to dry two 55 gallon barrels, and the New Fuel Storage Building to have the capacity to dry up to ten 55 gallon barrels simultaneously. Each drying station will have a catch basin to contain small amounts of liquid spillage/leakage that could occur, as well as a ventilation exhaust hood connected to an in-line HEPA filter. Barrel heaters will be used to aid in the evaporation process. This same barrel evaporation method was used throughout decommissioning in the Reactor Building, to dry concrete cutting slurry prior to disposal of the solid slurry as radioactive waste. Two previous safety evaluations reviewed processes involving radioactive liquid outside the Reactor Building: the

laundry trailer and the respirator cleaning trailer. The amount of activity available for release from the barrel drying stations is much less than that previously evaluated from the laundry and respirator cleaning trailers. Transportation of wastewater to the drying stations, and of the solids remaining following evaporation from the drying stations, will be in accordance with SEG procedures for the movement of radioactive material.

The levels of contamination possible in liquid wastes at FSV are very low at this late stage of decommissioning. It was conservatively assumed that barrels could have Co-60 and Cs-137 concentrations each as high as 4 E-7 μCi/ml, resulting in a total inventory of approximately 1 μCi of Co-60 and 1μCi of Cs-137 per barrel. If it is postulated that an accident (not necessarily credible) results in 100% of the activity from 12 barrels becoming airborne, doses to an individual located 100 meters from the drying stations were calculated to be 1 E-3 mrem whole body and 1 E-2 mrem to the lungs. This calculation assumed an instantaneous release, no credit for the HEPA filters, and the worst case dispersion factor for 100 meters identified in DP Section 3.4.2. The barrel drying stations are located greater than 100 meters from the Emergency Planning Zone boundary.

The safety evaluation determined that establishment of drying stations in Building 14 and in the New Fuel Storage Building does not increase the probability of occurrence or consequences of accidents or malfunctions of equipment previously evaluated in the DP. Natural phenomenon were considered in this evaluation. The water level in a flood would not reach the elevation of the drying stations. In the event of an earthquake, it is considered that barrels could possibly tip and spill their contents. However, the low activity inventories would not produce a safety risk to the public or workers involved in cleanup of a spill of radioactive liquid. Consequences of a tornado would be bounded by those previously evaluated in Section 3.4.9 of the DP, in which 741 curies of activity were assumed to be released to the atmosphere due to a tornado-generated missile striking a container full of activated graphite blocks. Likewise, consequences of a fire involving a barrel drying station would be bounded by those previously evaluated in Section 3.4.9 of the DP, in which 3,706 curies of activity were assumed to be released from a fire involving activated graphite blocks resulting in a whole body dose of 121 mrem and a lung dose of 215 mrem.

The safety evaluation determined that the possibility of new or different types of accidents or malfunctions would not be created by establishment of the barrel drying stations since the only credible initiating events for potential accidents involving the drying stations are natural phenomena and a fire/explosion. These accidents have been previously evaluated in the DP. No margin of safety in the basis for any technical specification is reduced, and there are no technical specifications that specifically apply to the drying activities.

Based on the above, it was concluded that establishment of the drying stations in Building 14 and in the New Fuel Storage Building does not constitute an unreviewed safety question. It should be noted that the decommissioning/final survey/repowering schedule for the New Fuel Storage Building precluded its use for barrel drying activities, and Building 14 is the only location outside the Reactor Building where barrel drying activities have actually occurred.

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SUBJECT: Submits revised Table 2 which corrects copying errors & adds ltr NJ Liparulo to FR Orr "Re-analysis Work Plans using Final Best Estimate Methodology," NSD-NRC-96-4746 960613.

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