

August 30, 1991

Docket No. 50-267

Mr. A. Clegg Crawford  
Vice President, Nuclear Corporation  
Public Service Company of Colorado  
P.O. Box 840  
Denver, Colorado 80201-0840

Dear Mr. Crawford:

SUBJECT: FORT ST. VRAIN PROPOSED DECOMMISSIONING PLAN - REQUEST FOR  
ADDITIONAL INFORMATION

By letters dated April 26, 1991 and July 1, 1991, you provided responses to our February 8, 1991 questions on the proposed Fort St. Vrain Decommissioning Plan. During our review of these submittals, we determined that additional information was needed. Please respond to the enclosed request for additional information by October 30, 1991. Your cost estimate report of June 6, 1991 and your response of July 30, 1991 to NRC questions on the proposed Decommissioning Technical Specifications are under review by the NRC staff.

This requirement affects nine or fewer respondents and, therefore, is not subject to Office of Management and Budget review under P. L. 96-511.

Sincerely,

Original signed by:

Peter B. Erickson, Senior Project Manager  
Non-Power Reactors, Decommissioning and  
Environmental Project Directorate  
Division of Advanced Reactors  
and Special Projects  
Office of Nuclear Reactor Regulation

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555

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Sincerely,

A handwritten signature in cursive script that reads "Peter B. Erickson".

Peter B. Erickson, Senior Project Manager  
Non-Power Reactors, Decommissioning and  
Environmental Project Directorate  
Division of Advanced Reactors  
and Special Projects  
Office of Nuclear Reactor Regulation

Enclosure:  
As stated

## REQUEST FOR ADDITIONAL INFORMATION

## FORT ST. VRAIN

## PROPOSED DECOMMISSIONING PLAN

The following comments are a result of our review of the PSC response of April 26, 1991 and initial review of the July 1, 1991 revisions to the Proposed Decommissioning Plan. These submittals respond to the NRC request for additional information (RAI) of February 8, 1991. Each comment below is identified by the corresponding question number in the NRC RAI. PSC's response of July 30, 1991 to NRC questions on the proposed Decommissioning Technical Specifications is under review by the NRC staff as is the PSC revised cost estimate report of June 6, 1991.

RAI No.      Additional comments and questions

3.            Section 1.3.1; Decommissioning Cost

On June 6, 1991 PSC submitted a revised cost estimate report which is now under review by the NRC staff.

4.            Section 1.3.2; Funding Plan

PSC has not responded to questions 4.A and 4.B and indicated a response may be provided in the third quarter this year. This remains an open issue that must be resolved as part of NRC approval of the Decommissioning Plan.

9.            Section 2.3.3.1; PCRV Dismantlement Activities

While PSC has addressed some of our concerns, PSC must submit the final dismantling methods and a supporting safety analysis for NRC review. Alternatively, provide description and safety analysis for potential options that may be used. Include evaluations of and methods to minimize personnel exposure in your safety analysis.

11.           Section 2.3.3.6.2; Water Cleanup and Clarification System

Provide analysis of radiological consequences of system operation. Further, provide a safety analysis for potential accident scenarios with regard to occupational and public exposure. Include analysis of radioactive material (including tritium) that is released to this system.

12.           Section 2.3.3.7; PCRV Top Head Concrete and Liner Removal

Provide a safety analysis of procedures being developed to minimize personnel exposure. What maximum radiation levels are expected at worker locations during removal of radioactive components? Neither the April 26, 1991 response nor the July 1 revision to the Decommissioning Plan provide this information.

13. Section 2.3.3.8; Dismantling PCRV Core Components

PSC's April 26th response states that three methods are being evaluated for removing highly radioactive components from the core. The revised Decommissioning Plan of July 1, 1991 still does not provide sufficient detail on the removal of 272 reflector blocks containing about 20,000 hasteloy cans, each reading 10,000 R/hr. What exposure levels would workers be subjected to during removal of PCRV radioactive components? A comprehensive safety analysis of the removal of radioactive parts must be submitted as part of the Decommissioning Plan.

14. Section 2.3.3.9; Core Barrel Removal

The July 1, 1991 revision selects a thermal cutting method for core barrel removal. Provide procedures and related safety analysis for minimization of occupational exposure to personnel.

16. Section 2.3.3.12; Final Dismantling

We understand that you plan to conduct testing that demonstrates the suitability of sectioning the concrete with a diamond wire through the tendon tubes. Please provide your test results.

38. Section 3.3.2.2; Liquid Wastes

PSC estimates that about 500 curies of tritium would be released to the PCRV shield water from the 100,000 curies of tritium in the graphite (one-half of one percent). PSC's April 26th response and July 1st revision to the Decommissioning Plan state that the estimated tritium release from graphite blocks to PCRV shield water is "based on data." The source of this data must be provided and its accuracy and applicability justified. Include in these evaluations the structure of graphite blocks, e.g., unclad, and material composition.

PSC's July 10, 1991 Supplement to Environmental Report, page 4-12 states that feed and bleed operations would be used to dilute 535 curies of tritium to one-half of 10 CFR Part 20 limits using 2000 gallons of water per minute for about one month. This is based on the data evaluation above. Any change in this evaluation must be reflected in the release plan. Provide verification that the planned releases are consistent with ALARA principles and Environmental Protection Regulations related to 10 CFR Part 51. Discuss other potential release options considered.

Also evaluate the potential contamination of large volumes of concrete with tritium from water leaks in PCRV penetrations or liner, from drying of wet graphite blocks, from water spills during cask and radioactive material handling and from evaporation of water from open PCRV pool surface. As discussed with your staff, tritiated water of hydration in the concrete of a reactor room at a 6 MW, heavy water, research reactor prevented its release for unrestricted use after extensive decontamination efforts (NUREG/CR-3336 "Summary Report Ames Laboratory Research Reactor").