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Public Service  
Company of Colorado

November 7, 1996  
Fort St. Vrain  
P-96093

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

50-267

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

Docket No. 50-267

**SUBJECT: Request to Terminate the Fort St. Vrain Facility Operating License  
(Possession Only)**

REFERENCES:

1. PSCo Letter, Borst to Weber, dated October 30, 1996 (P-96090)
2. NRC Letter, Weber to Crawford, dated September 25, 1996 (G-96162)
3. NRC Letter, Erickson to Crawford, dated November 23, 1992 (G-92244)

Dear Mr. Weber:

This letter requests that the NRC terminate Public Service Company of Colorado's (PSCo) Facility Operating License (Possession Only), No. DPR-34, for the Fort St. Vrain Station, in accordance with the provisions of 10 CFR 50.82(a). PSCo and our decommissioning contractor, the Westinghouse Team (WT), have completed all required decommissioning activities, including performance of the Final Radiation Survey. The final phase of the Fort St. Vrain Final Survey Report was submitted for NRC approval on October 30, 1996 (Reference 1).

With submittal of the Final Survey Report, PSCo considers that we have satisfied all of the NRC's requirements for license termination, as identified in the Decommissioning Rule for Nuclear Power Reactors, 10 CFR 50.82(a). Specifically, PSCo considers that:

1. Decommissioning activities have been carried out in accordance with the approved FSV Decommissioning Plan and Decommissioning Order, and

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2. The Final Survey Report and associated documentation thoroughly demonstrate that the Fort St. Vrain Facility and site are suitable for release for unrestricted use.

In Reference 2, the NRC provided concurrence that PSCo has satisfied all the elements of a license termination plan as required by the Decommissioning Rule. Also, in the Fort St. Vrain Decommissioning Order, Reference 3, the NRC stated that decommissioning in accordance with the Decommissioning Plan would not be inimical to the common defense and security, or to the health and security of the public, and that it would not result in any significant environmental impact.

Based on the above, PSCo requests that the NRC terminate the Fort St. Vrain Facility Operating License, as evidenced by a License Amendment. This request is included in the following attachments to this letter:

Attachment 1	Proposed Change to Facility Operating License
Attachment 2	Evaluation of No Significant Hazards Consideration

It is recognized that, although decommissioning and final survey activities have been completed, there are several remaining open issues, as follows:

- The final survey plan for the liquid effluent pathway has not yet been approved. A specific plan for obtaining environmental samples and survey measurements for this area was submitted for NRC approval on September 11, 1996, and resolution is expected by the end of November.
- PSCo understands that the NRC will likely provide comments on the first two phases of the Final Survey Report, which were submitted on May 31 and August 9, 1996. Also, it is likely that there will be open items from the NRC's on-site inspection conducted from September 30 through October 4, 1996. PSCo will provide timely response to these open items upon receipt.
- Some of Fort St. Vrain's low level radioactive waste remains in temporary storage at two waste processing facilities, awaiting processing and disposal. PSCo has contacted both the Scientific Ecology Group, Inc. and Envirocare of Utah, Inc. and has obtained assurances that all of this material will be shipped for disposal by the end of 1996.

Notwithstanding the above open issues, PSCo has determined that termination of the Fort St. Vrain Facility Operating License (Possession Only) would involve No Significant Hazards Consideration, as described in Attachment 2.

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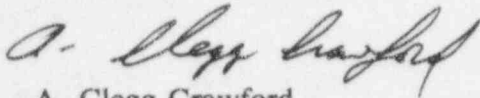
November 7, 1996

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PSCo requests NRC action to terminate the Fort St. Vrain Facility Operating License (Possession Only) as soon as practical, to minimize ongoing costs and obligations associated with current license requirements. PSCo understands that the NRC plans to conduct two public meetings in preparation for final license termination, and we will provide any appropriate support for these meetings.

If you have any questions concerning this submittal, please contact Mr. M. H. Holmes at (303) 571-7633.

Very truly yours,



A. Clegg Crawford  
Vice President  
Engineering and Operations Support

ACC/SWC

Attachments

cc: Regional Administrator, Region IV

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

In the Matter of the Facility Operating License )  
of )  
Public Service Company of Colorado ) Docket No. 50-267  
Fort St. Vrain Unit No. 1 )

My commission expires 11-29, 1999.

In the Matter of the Facility Operating License )  
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 of )  
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 PUBLIC SERVICE COMPANY OF COLORADO)

OF THE  
PUBLIC SERVICE COMPANY OF COLORADO  
FOR THE

Attorney for Applicant

ATTACHMENT 1

TO P-96093

**PROPOSED CHANGE TO  
FACILITY OPERATING LICENSE**



PUBLIC SERVICE COMPANY OF COLORADO  
FORT ST. VRAIN NUCLEAR GENERATING STATION  
DOCKET NO. 50-267  
FACILITY OPERATING LICENSE

License No. DPR-34

1. The Nuclear Regulatory Commission (the Commission) having found that:
  - A. The application for license termination filed by Public Service Company of Colorado (the licensee) complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I and all required notifications to other agencies or bodies have been duly made;
  - B. Decommissioning activities at the Fort St. Vrain facility have been carried out in accordance with the approved Decommissioning Plan and Decommissioning Order; and
  - C. The Final Survey Report and associated documentation demonstrate that the Fort St. Vrain facility and site are suitable for release for unrestricted use.
2. Facility Operating License No. DPR-34, issued to the Public Service Company of Colorado, including appendices and attachments, is hereby terminated, as follows:
  - A. The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 89, are hereby cancelled.
3. This termination is effective as of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Date of Issuance:

ATTACHMENT 2

TO P-96093

**EVALUATION OF  
NO SIGNIFICANT HAZARDS CONSIDERATION**



**EVALUATION OF  
NO SIGNIFICANT HAZARDS CONSIDERATION**

**FOR**

**TERMINATION OF THE FORT ST. VRAIN  
FACILITY OPERATING LICENSE (POSSESSION ONLY)  
LICENSE NO. DPR-34**

**I. Introduction**

Public Service Company of Colorado (PSCo) is requesting NRC action to terminate the Fort St. Vrain Facility Operating License (Possession Only), as the last and final amendment to License No. DPR-34.

Pursuant to 10 CFR 50.91, each application for amendment to an operating license must be reviewed to determine if the proposed change involves a significant hazards consideration. The NRC has provided standards for determining whether a significant hazards consideration exists, in 10 CFR 50.92(c). A proposed amendment to an operating license for a facility involves no significant hazards consideration if the change to the facility in accordance with the proposed amendment would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated, or
2. Create the possibility of a new or different kind of accident from any accident previously evaluated, or
3. Involve a significant reduction in a margin of safety.

PSCo has reviewed termination of the Fort St. Vrain Facility Operating License (Possession Only) in its entirety, and has determined that it does not involve a significant hazards consideration. The basis for this determination is as follows:

**II. Background**

The Fort St. Vrain Nuclear Generating Station was the first and only commercial-sized High Temperature Gas-Cooled Reactor in the United States. Its initial criticality occurred in 1974 and it generated electricity from 1976 through 1989.

In August 1989, the Fort St. Vrain Nuclear Generating Station was shut down for the final time, due to failures in control rod drive mechanisms and steam generator ring headers. In November 1990, PSCo submitted a Proposed Decommissioning Plan, and requested NRC approval of the early dismantlement (DECON) decommissioning alternative. As part of the Proposed Decommissioning Plan, PSCo indicated its plans to re-power the generating station with natural gas-fired equipment.

The DECON alternative for decommissioning Fort St. Vrain involved five major activities:

1. Removal of the Prestressed Concrete Reactor Vessel (PCRV) internal radioactive components remaining after defueling the reactor.
2. Decontamination and/or dismantlement of those portions of the PCRV structure and radioactive balance-of-plant systems which exceed limits for unrestricted release of residual radioactive materials.
3. Shipment of all radioactive waste off-site for disposal.
4. Completion of a final site radiation survey to confirm that all site areas can be released for unrestricted use.
5. Termination of the 10 CFR 50 operating license.

#### **Possession Only License**

In recognition of PSCo's decision to permanently shut down the Fort St. Vrain Nuclear Generating Station, the NRC issued a "Possession Only" amendment to the Facility Operating License in May 1991, authorizing PSCo to possess but not operate the Fort St. Vrain nuclear facility.

#### **Spent Fuel Disposition**

Before decommissioning could begin, all spent nuclear fuel had to be removed from the Prestressed Concrete Reactor Vessel (PCRV). PSCo licensed and constructed an on-site Independent Spent Fuel Storage Installation (ISFSI), in accordance with the requirements of 10 CFR 72. Fort St. Vrain's spent fuel was transferred to the ISFSI from December 1991 to June 1992. In February 1996, the Department of Energy assumed title to Fort St. Vrain's spent fuel, and undertook the process of transferring the license for this facility from PSCo to the Department of Energy.

## **Decommissioning Authorization**

In November 1992, the NRC approved the Fort St. Vrain Decommissioning Plan and issued a Decommissioning Order authorizing PSCo to decommission the Fort St. Vrain Nuclear Generating Station. This Order stated that the Decommissioning Plan replaced the Safety Analysis Report in its entirety, and that PSCo was authorized to (i) make changes in the facility or procedures as described in the Decommissioning Plan and (ii) conduct tests, or experiments without prior NRC approval provided they did not involve a change in the Decommissioning Technical Specifications or an unreviewed safety question. A quarterly report describing any such changes, tests, or experiments, including a summary of the safety evaluations, was also required by the Order. In addition to the requirements of the Order, PSCo has provided annual updates to the Decommissioning Plan throughout the decommissioning project.

## **Satisfaction of Decommissioning Technical Specification Requirements**

The Fort St. Vrain Decommissioning Plan analyzed eight postulated accidents that could potentially have resulted in radiation exposures to members of the public at the site boundary, as follows:

- Contaminated concrete rubble drop
- Conversion (re-powering) construction near PCRV dismantlement
- Heavy load drop
- Fire
- Loss of PCRV shielding water
- Loss of power
- Natural disasters
- Steam generator primary module drop

In order to maintain site boundary doses less than a small fraction of the EPA Protective Action Guidelines, certain of these postulated accidents relied upon plant features such as Reactor Building filtered ventilation and confinement integrity. The Decommissioning Technical Specifications were written to ensure operability of essential plant equipment for as long as it was relied upon by the accident analyses, and to then permit an orderly reduction in requirements and eventual dismantlement of associated equipment, as necessary. Specifically, the transition out of Decommissioning Technical Specification requirements occurred as follows:

- LC 3.1, Reactor Building Confinement Integrity, was maintained as long as activated graphite components remained within the Reactor Building. These requirements were satisfied and the Limiting Condition was exited on April 11, 1994.

- LC 3.2, Reactor Building Ventilation Exhaust System, was maintained as long as activated graphite components remained within the Reactor Building. These requirements were satisfied and the Limiting Condition was exited on April 11, 1994.
- LC 3.3, Radiation Monitoring Instrumentation, was maintained as long as material remained within the Reactor Building that could exceed the most limiting monitor setpoint of 15 mR/hr. Radioactive material that could exceed this setpoint was removed from the Reactor Building and the Limiting Condition was exited on June 24, 1996.
- LC.3.4, PCRV Shield Water Tritium Concentration, was maintained as long as shield water remained within the PCRV. The last shield water was released from the PCRV and the Limiting Condition was exited on October 17, 1995.
- AC 5.11, Natural Gas Restriction, was maintained as long as activated graphite components remained within the Reactor Building. These requirements were satisfied and the Limiting Condition was exited on April 11, 1994.

It is also noteworthy that the Decommissioning Plan projected the expenditure of 433 person-Rem, with an estimated time in radiologically controlled areas of 233,100 person-hours. The Westinghouse Team implemented a very effective program to keep occupational doses as low as reasonably achievable (ALARA), and the actual cumulative exposure was 380 person-Rem, while actual time in radiologically controlled areas substantially exceeded the original estimate at over 800,800 person-hours.

### **Final Survey Plan**

Although the Decommissioning Plan included a chapter describing PSCo's plans for conducting a final radiation survey, a more detailed plan was submitted for NRC approval, using the guidance in Draft NUREG/CR-5849. The Fort St. Vrain Final Survey Plan was submitted in February 1994 and was approved in January 1995.

The Final Survey Report documents that the Fort St. Vrain facility has been decontaminated and satisfies the acceptance criteria for unrestricted use. There are approximately 220,000 final measurements included in the Final Survey Report, and the total number of survey measurements, including characterization surveys, investigation surveys, and remediation surveys, is over 400,000 measurements. The Final Survey Report was submitted in three phases, on May 31, August 9, and October 30, 1996. With the completion of these submittals, PSCo considers that (as required for license termination by 10 CFR 50.82(a)(11)):

1. Decommissioning activities have been carried out in accordance with the approved FSV Decommissioning Plan and Decommissioning Order, and



2. The Final Survey Report and associated documentation thoroughly demonstrate that the Fort St. Vrain facility and site are suitable for release for unrestricted use.

### **III. Evaluation of No Significant Hazards Considerations**

As described above, the completion of decommissioning and the final radiation survey report demonstrates that:

- Final site release criteria have been met,
- There are no remaining radiological hazards,
- There are no more possible accidents that could result in radiation exposures to members of the public (including potential future site workers),
- There are no more radiological liquid or gaseous effluents to release, and
- There are no more solid radioactive waste materials to release.

Therefore, termination of the Fort St. Vrain Facility Operating License (Possession Only) would involve No Significant Hazards Considerations, as described in 10 CFR 50.92, as follows:

1. Termination of the license would not involve a significant increase in the probability or consequences of an accident previously evaluated, because all radioactive material in excess of the Fort St. Vrain site release criteria has been removed from the facility. None of the radioactive materials involved in accidents analyzed in the Decommissioning Plan remain on-site, and therefore there are no previously evaluated accidents that could result in radiation doses.
2. Termination of the license would not create the possibility of a new or different kind of accident from any accident previously evaluated because all residual radioactive material complies with the site release criteria. All credible future-use scenarios have been evaluated and determined to result in no personal exposures greater than the site release criteria (i.e., 10 mRem per year, as identified in Section 3.3 of the Fort St. Vrain Final Survey Plan for the soil and water pathway), and no new or different plant operating modes or facility uses are created.
3. Termination of the license would not involve a significant reduction in a margin of safety because all site release criteria were satisfied, with considerable margin. The Final Survey Report provides graphical representations of total surface activity, residual surface activity, and exposure rate measurements, and the results clearly indicate that residual radioactive material remaining at the Fort St. Vrain facility is well below the site release criteria.

The Fort St. Vrain facility will remain within the PSCo system as an operating generating station. The re-powering project is well underway with the first natural gas-fired combustion turbine already in commercial service, generating about 130 MW. Installation of a heat recovery steam generator is also in progress. The final condition of the entire Fort St. Vrain facility, including the Reactor Building and previously contaminated areas, is suitable for unrestricted use.

Based upon the preceding evaluation, PSCo has determined that termination of the Fort St. Vrain Facility Operating License (Possession Only) does not involve a Significant Hazards Consideration as described in 10 CFR 50.92(c).

### **Environmental Evaluation**

PSCo also determined that termination of the Fort St. Vrain Facility Operating License (Possession Only) will not result in any significant environmental impacts, consistent with the NRC's findings in the Fort St. Vrain Decommissioning Order.