



PUBLIC SERVICE COMPANY OF COLORADO

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OSCAR R. LEE
VICE PRESIDENT

July 20, 1984
Fort St. Vrain
Unit No. 1
P-84220

Director of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, DC 20555

DOCKET NO. 50-267

SUBJECT: Fort St. Vrain Updated FSAR,
Revision 2

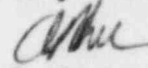
Dear Sir:

Enclosed is one (1) signed original and twelve (12) additional copies of Revision 2 to the Updated Final Safety Analysis Report (Updated FSAR) for Fort St. Vrain which has been prepared and is being submitted in accordance with 10CFR50, Section 50.71(e).

This revision includes the effects of changes made in the facility or procedures as described in the Updated FSAR; safety evaluations performed by PSC, either in support of license amendments or in support of conclusions that changes did not involve an unreviewed safety question; and analyses of new safety issues performed by or on behalf of PSC at Commission request.

Brief descriptions of the principal changes or additions to affected sections and appendices of the Updated FSAR, Revision 2, are included in Attachment A. Other changes made in the FSAR, not requiring prior Commission approval pursuant to 10CFR50.59(a), and not yet reported to the Commission, are listed in Attachment B to this letter. These changes will be more fully described along with the results of their safety evaluations, as appropriate, in PSCo's regular report of 10CFR50.59 changes.

Very truly yours,


O. R. Lee, Vice President
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Attachments

- A - Description of Principal Changes Incorporated into
Revision 2 of the Updated FSAR
- B - List of 10CFR50.59 changes not previously reported to the
Commission



SUCCESS BOND
CORPORATION

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

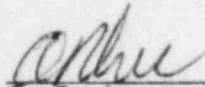
In the Matter

Public Service Company of Colorado
Fort St. Vrain Unit No. 1

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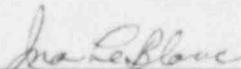
O. R. Lee, being duly sworn, hereby deposes and says that he is Vice President of Public Service Company of Colorado; that he is duly authorized to sign and file with the Nuclear Regulatory Commission Revision 2 of the Updated FSAR; that he is familiar with the content thereof; and that the matters set forth therein are true and correct to the best of his knowledge, information and belief.



O. R. Lee
Vice President

STATE OF Colorado)
COUNTY OF Denver)

Subscribed and sworn to before me, a Notary Public on this 20th
day of July, 1984.



Notary Public
4026 E. 113th Ave
Denver, CO 80233

My commission expires August 19, ¹⁹⁸⁷1984.

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Description of Principal Changes Incorporated
in Revision 2 to the Updated FSAR

SECTION 1

A brief description has been added to the design modification summary portion of this section to address the Building 1C Addition. The discussion of the environmental qualification of electrical equipment was expanded to add the results of subsequent environmental steam line testing. Also added information concerning the fuel element surveillance program for PGX graphite and the use of H-451 graphite for the third and subsequent core reloads.

SECTION 2

Updated the discussion of the river monitoring program to reflect Amendment 32 to the Facility Operating License. Revised the description of the Radiological Environmental Monitoring Program to incorporate the effects of Amendment 37 to the Facility Operating License.

SECTION 3

New information was added to incorporate the NRC's approval (Amendment 40 to the Facility Operating License) to use H-451 graphite in the third and subsequent core reloads. Updated the discussion of startup neutron sources to reflect the addition of a third source in February 1984. Added a discussion of the thermal effects on control rod drive motor operation as provided by GA Technologies and PSC and approved by the NRC. Updated the discussion of the operational fuel surveillance program to reflect the results of recent examinations and evaluations.

SECTION 4

Minor revisions to clarify existing descriptions of helium circulator water turbine drive operation, the addition of a vent path downstream of the buffer helium dryer and the modification to permit redirecting the Turbine Water Drain Tank vent discharge from the Reactor Building Sump to the Reactor Building Ventilation System.

SECTION 5

Added information concerning thermal effects on control rod drive motors as described in Section 3 above. Discussion was added to incorporate conclusions from the Los Alamos National Laboratory study (approved by the NRC) concerning PCRV liner hot spots.

SECTION 6

Editorial clarification of the reactor building ventilation system to parallel the discussion of the same subject found in Section 14.11

SECTION 8

Revised this section to add results of the FSV degraded grid protection study conducted by EG&G for the NRC. Added information related to recent electrical modifications including changes to the DC power and instrument power systems, 480VAC undervoltage protective relaying changes and the replacement of the 480V essential load centers. Clarified the description of the standby diesel generator load sequencing operation.

SECTION 9

Added information related to fire protection and detection system for Building 10. Updated the paragraph dealing with 10CFR50 Appendix R fire protection requirements to reflect the current status of this issue. Changed discussion of reactor plant cooling water surge tanks to reflect modification which replaced hydrogen cover gas with nitrogen.

SECTION 10

Added new information pertaining to the shock suppressor (snubber) testing program as defined in Amendment 39 to the Facility Operating License.

SECTION 11

Revised this section to incorporate the NRC's approval of PSC's compliance with NUREG-0737, Item II B.2, dealing with physical shielding and access control. Made revisions throughout to incorporate the effects of Amendment 37 to the Facility Operating License which completely revised information and methodologies pertaining to liquid and gaseous effluents.

SECTION 12

Updated this section to reflect organizational and personnel changes. Incorporated PSC's requalification training program into Section 12.2 as required by Generic Letter 84-14 (and as previously approved by the NRC). Updated portions of this section to reflect Amendments 36 and 37 to the Facility Operating License.

SECTION 14

Added information pertaining to use of H-451 graphite as approved by Amendment 40 to the Facility Operating License.

APPENDIX A

Reformatted and renumbered accordingly, all of Appendix A, to be consistent in format to all other FSAR sections. Updated the discussions of the operational fuel surveillance program and the Post Irradiation Examination (P.I.E.) program. Added new information concerning the design, test program and use of H-451 graphite for the third and subsequent reloads as approved by Amendment 40 to the Facility Operating License. Replaced information in Section A.10 (formerly A.1.9) which was inadvertently omitted in the original FSAR Update and had been part of PSC's answer to DRL Question 6.8.

Appendix I

Clarified the discussion of the environmental steam line testing to better describe the results of initial and subsequent testing.

NOTE: Where appropriate, sections were revised to use consistent terminology or make editorial clarification of descriptive material to achieve consistency with other sections in the FSAR. Minor typographical and editorial errors were also corrected.

FSAR CHANGES PER 10CFR50.59
(Not Previously Reported to the Commission)

As required by 10CFR50, Section 50.71(e-2(ii)), following is a list of the changes made under the provisions of 10CFR50, Section 50.59 which have not previously been submitted to the Commission. These changes will be more fully described, along with the results of their safety evaluations, as appropriate, in PSC's regular report of 10CFR50.59 changes.

| <u>FSAR Section</u> | <u>Description of Change</u> |
|---------------------|--|
| 1.2 | Added information concerning modifications to the Instrument Power System. These include upgrading Battery Chargers 1C and 1D. Station batteries 1A, 1B and 1C were replaced. Three new inverter/static transfer switches, 1A, 1B and 1C, were installed to improve overall system reliability. Three new distribution panels, Instrument Power Buses 1A-1, 1B-1 and 1C-1 were added to provide the capability for future loading requirements. A static transfer switch allowing manual or automatic throwover from either of two essential power sources to interruptible Instrument Power Bus 3 was installed. Also, installed new 480-240/120 VAC Backup Instrument Power Transformers 1A-1, 1B-1 and 1C-1 to provide alternate power sources to non-interruptible instrument power buses. |
| 7.1 | |
| 7.4 | |
| 8.2 | |
| (as applicable) | Added information concerning the replacement of 480 VAC essential load center switchgear and 4160-480 VAC Load Center Transformers 1, 2 and 3. The new transformers have increased capacity and were relocated outdoors. In addition, current limiting reactors were installed to limit fault current between essential 480 VAC load centers and their essential motor control centers. Undervoltage relaying was installed on 480 VAC essential buses. |
| 4.2 | Added information concerning the installation of a buffer helium vent line downstream of the buffer helium dryer in each loop. This is to allow the establishment of buffer helium and bearing water flow prior to the first helium circulator startup in each loop and to allow the controlled reduction of the pressure in the bearing water surge tank. Also added information concerning the |

modification to direct the Turbine Water Drain Tank (TWDT) vent to the reactor building ventilation system. This provides the capability of redirecting the TWDT vent discharge from the reactor building sump to the reactor building ventilation in the event that the TWDT becomes contaminated.

- 9.7 Added information to reflect the replacement of the hydrogen gas blanket, for the reactor plant cooling water surge tanks, with a nitrogen blanket.
- 9.12 Added information concerning the installation of deluge systems for fire protection on the new 4160-480V Load Center Transformers 1, 2 and 3.