

PUBLIC SERVICE COMPANY OF COLORADO
FORT ST. VRAIN NUCLEAR GENERATING STATION

REPORT OF CHANGES, TESTS, AND EXPERIMENTS
NOT REQUIRING PRIOR COMMISSION APPROVAL PURSUANT
TO 10CFR50.59(a)

January 1, 1983, through December 31, 1983

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INTRODUCTION

This report is submitted to comply with the requirements of Part 50.59(b) of Title 10, Code of Federal Regulations as they apply to Fort St. Vrain Nuclear Generating Station, Unit No. 1. It includes the period of January 1, 1983, through December 31, 1983.

Some definitions of major terms used in this report which may be helpful:

Change Notice - A document containing installation, inspection and testing requirements, design background information, and design document updating requirements which specify the design control requirements applicable to a plant modification and authorizes changes to "as-built" plant design documentation.

"T" Tests - Tests proposed and conducted by Public Service Company of Colorado.

"RT" Tests - Tests proposed by GA Technologies and conducted by Public Service Company of Colorado.

In this report, the safety evaluation for the changes, tests, and experiments is summarized. The terminology used in these summaries is defined as follows:

Safety Related Items

Those plant systems, structures, equipment, and components which are identified in the FSAR, and as detailed and supplemented by applicable piping and instrument (P & I) diagrams, IB and IC diagrams, and SR-6-2 and SR-6-8 lists to include the following:

- a) Class I per the Updated FSAR, Tables 1.4-1 and 1.4-3.
- b) Safe shutdown components per the Updated FSAR, Tables 1.4-2 and 1.4-3.

Safety Significant Change

Changes to the facility, systems, components, or structures as described in the FSAR that may do any one of the following:

- a) Affect their capability to prevent or mitigate the consequences of accidents described in the FSAR.
- b) Could result in exposures to plant personnel in excess of occupational limits.

Changes in the safety related systems which involve the addition, deletion, or repair of components, structures, equipment, or systems such that the original design intent is changed (i.e., changes in redundancy, performance characteristics, separation, circuitry logic, control, margins of safety, safe shutdown, accident analysis, or any change that would result in an unreviewed safety question or require a Technical Specification change).

Unreviewed Safety Question

Any plant modification or activity that is deemed to involve an unreviewed safety question as defined in 10CFR50.59 (a)(2), in which:

- a) The probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the FSAR may be increased; or
- b) The possibility of an accident or malfunction of a different type than any evaluated previously in the FSAR may be created; or
- c) The margin of safety as defined in the basis for any Technical Specification is reduced.

To reduce the size of this report, many repetitive terms have been abbreviated. The reader is referred to Section 5.0 for an index of the abbreviations used. Certain systems are identified by their generic Fort St. Vrain system numbers; Section 6.0 contains a list of system number identifications used.

1.0 PUBLIC SERVICE COMPANY CHANGE NOTICES

All CN's will be described in the following order:

- First - CN number.
- Second - system/component number.
- Third - description of the change.
- Fourth - summary of safety evaluation.

CN-572

System 70/General Structures

This CN updated several documents to reflect as-built conditions of the revolving door at the entrance to Fort St. Vrain. The revolving door was installed in 1974, however, documents were not updated to show the new door. Figure 1.2-18 of the FSAR is affected by this modification update.

Since this CN is only a formal mechanism for updating documents for an "as-built" modification, it does not involve an unreviewed safety question, nor is it a safety significant issue.

CN-1169

System 48/Alternate Cooling Method

This modification relocated the starting batteries for the Alternate Cooling Method (ACM) diesel-generator to a heated building.

Prior to this modification, the starting batteries for the ACM diesel-generator were located in the shell of the diesel-generator itself. This location required the installation of heat tape at the beginning of each winter season. The relocation of the starting batteries to an adjacent building provided the necessary temperature and ventilation control to ensure the electrical start system was continuously in an operable condition. The addition does not increase the probability of any accidents analyzed in the FSAR. This CN is not safety significant and does not involve an unreviewed safety question.

CN-1326

System 93/Meterological Instrumentation

This CN and it's associated revisions installed a 60 meter tower and various instrumentation to measure and analyze meterological conditions adjacent to the Fort St. Vrain site. The installation was in response to NUREG-0654.

The meterological instrumentation was installed to provide data on meterological conditions for plant opertions and to determine stability catagories per the station's RERP. The probability of occurrence of an accident or malfunction has not been increased. This CN does not involve an unreviewed safety question, nor is it safety significant.

CN-1394

Systems 79 and 90/Technical Support Center and Station Computers

This modification provided computer system upgrades for the station's Emergency Response Facilities.

The computer system upgrade incorporated new system monitoring points and recording capabilities to provide necessary information to the Technical Support Center as required per NUREG-0696. This change does not involve an unreviewed safety question, nor is it safety significant.

CN-1401

System 93/Radiation Detection Instrumentation

This modification installed a high range area radiation monitor on the east wall of the refueling floor.

The high range monitor replaced an existing low range monitor. This modification was the result of a NRC commitment. This change does not involve an unreviewed safety question, nor is it safety significant.

CN-1433

Systems 62 and 72/Radioactive Liquid Waste System

This CN incorporated minor equipment/component changes and control circuit revisions to the radioactive liquid waste and the reactor building sump discharge systems.

The modification installed a three-way ball valve at the junction of the radioactive liquid waste system (62) and the reactor building sump discharge (72) lines. This prevents a simultaneous release from both systems which could invalidate the calculated release concentrations. The change also installed a new automated proportional sampler in the discharge line of the reactor building sump. Also installed, was a permanent connection to the firewater system for the purpose of flushing the radioactive liquid waste system. This CN and its associated revisions affected the operating procedures for this system significantly. The affected System Operating Procedure is addressed later in this report. Original design intent of the system remained unchanged, and the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the FSAR was not increased. This change is not safety significant and does not involve an unreviewed safety question.

CN-1436

System 11

This change to the steam generator penetration interspace pressure control system allows the interspaces to be operated at a pressure slightly greater than cold reheat steam pressure, but less than primary coolant (PCR) pressure.

This modification was installed due to known leakage. The reduced operating pressure maintains this leakage at a minimum. As this change did not affect the capability to prevent or mitigate the consequences of accidents described in the FSAR, this change is not considered to involve an unreviewed safety question. As the modification did, however, change the operating procedure and associated Technical Specification, the change is considered to be safety significant.

CN-1460

System 70/Building 10

This CN provided the structural design for the installation of a new building on site.

This change is not safety significant, and the change did not increase the probability of an accident or malfunction previously discussed in the FSAR. This change does not involve an unreviewed safety question.

CN-1461

System 70/Building 10

This CN provided the mechanical design for the installation of a new building on site.

This change is not safety significant, and did not increase the probability of an accident or malfunction previously discussed in the FSAR. This change did not involve an unreviewed safety question.

CN-1590

Systems 46 and 47/PCRV and Purification Cooling Water Systems

This modification allowed the use of a system 46 water chiller to supply cooling water to the helium purification cooler in the helium purification trains.

The modification allowed the physical connection between the chiller unit and the "front-end" coolers of both helium purification trains. However, the actual connection was only made on "A" helium purification train. The use of the chiller unit allowed cooling water to be sent to the cooler which enhanced the removal rate of moisture from the primary coolant (helium). As this modification did not change the basic functions of the helium purification system but rather facilitated the operation of the trains and provided for enhanced moisture removal from the primary coolant, the modification did not create any new failure modes nor reduce any capabilities to deal with those existing. Therefore, this change is not safety significant and does not involve an unreviewed safety question.

CN-1599

Systems 47 and 63/Purification Cooling Water and Radioactive Gas Waste Systems

This CN modified the cooling water piping on helium purification cooler, E-2302 to allow venting the cooling water system to the gas waste system.

This modification was a result of obtaining a primary coolant (helium) to purification cooling water leak in the cooler. Prior to this installation, the leak created a gas build-up in the cooling water system surge tanks. This build-up eventually lead to gas binding of the system pumps and coolers. The installation of the vent path directly to the gas waste system allows continued operation of the cooler until it can be replaced/repared (scheduled for Refueling Outage in early 1984). As the design and operation of the components did not change, this CN was not safety significant. The installation of the vent path did not increase the probability of an accident or malfunction and this change does not involve an unreviewed safety question.

CN-1741

Systems 17 and 18/Neutron Startup Source

This modification prepared a neutron startup source for Region 22, Column 6, Layer 4 of the reactor core.

The addition of the fourth startup source into the Fort St. Vrain core is required to provide adequate reactor control indication during startup operations. This addition to the reactor core will take place during the next refueling outage, scheduled for early 1984. This modification does not increase the probability of an accident or malfunction. This change is not safety significant, nor does it involve an unreviewed safety question.

2.0 PUBLIC SERVICE COMPANY TESTS (T-TESTS)

T-203

System 11/Core Support Floor

This test determined the magnitude of the flow resistances through the core support floor to the individual CSF vent lines (for both concrete and column vents).

The test did not affect plant safety or operation. The test did not modify any system and was performed consistent with current plant operating procedures. Testing was performed at less than full density and with the CSF vent system pressure at or below PCR_V pressure. It did not involve any equipment needed for safe shutdown. This test is not considered safety significant, nor does it involve an unreviewed safety question.

T-204

System 11/Core Support Floor

To identify any helium ingress from the PCR_V to the CSF, and if that ingress can be terminated by varying the ΔP between the PCR_V and the CSF.

Although the test required exceeding full density, the reactor was shutdown and pressure and temperature were within operational limits. The test was considered not safety significant and the probability of an accident or malfunction previously discussed in the FSAR was not increased. This test did not involve an unreviewed safety question.

T-205

System 11/Core Support Floor

Determines the magnitude of the flow resistances through the core support floor to the individual CSF vent lines (for both concrete and column vents)(same as T-203).

The test did not affect plant safety or operation. The test did not modify any system and was performed consistent with current plant operating procedures. Testing was performed at less than full density and with the CSF vent system pressure at or below PCRV pressure. It did not involve any equipment needed for safe shutdown. This test is not considered safety significant, nor does it involve an unreviewed safety question.

T-206

System 11/Fike RKB Rupture Discs*

* Brand Name

To test for adequate leak-tightness of non-seal welded Fike RKB Rupture Disc Assemblies.

The seal weld, originally a shop weld, is to be ground away to gain access for the rupture disc examination required by Technical Specification SR 5.2.1. It is not practical to perform the seal weld in place. Deletion of the seal weld would allow the performance of the examination without having to cut piping welds to remove the disc. The test was not performed on installed equipment, therefore it had no effect on plant safety. If the test results show sufficient pressure boundary protection without the use of the seal welds, a Change Notice will be issued to authorize the removal of the seal welds on the rupture disc assemblies in service. This test was not safety significant nor an unreviewed safety question.

T-208

System 62/RT-6212 and RT-6213

This test compared sensitivity values obtained on RT-6212 and RT-6213 using radioiodine solution and a series of point sources to establish a relationship. This will provide an easier and more efficient method of following the detectors' (and associated circuitry) performance.

The test was performed by station Radiochemistry personnel in order to establish a performance criteria base for the radiation detectors in the radioactive liquid waste system. This establishment of criteria will enable the station to verify proper performance of these detectors, which subsequently ensures safe operation of the radioactive liquid waste system. No releases were performed during the performance of this test. The test was not considered safety significant, nor did it involve an unreviewed safety question.

3.0 GA TECHNOLOGIES REQUESTS FOR TESTS (RT-TESTS)

RT-485

System 12/Control Rod Drive Mechanisms

This "request for test" was initially submitted by GA Technologies in 1978. The test called for installing temperature sensors on selected CRDMs for the purpose of recording and analyzing the temperatures experienced by the CRDMs during various plant operating conditions. Originally, the CRDMs in core regions 4, 5, 34, 35 and 36 were equipped with the sensors. Following the continuing data acquisition, the results were studied and the recommendation of installing sensors on all the CRDMs, whenever they are pulled, was made. Public Service Company of Colorado has followed-up on this recommendation with the production of a Change Notice to authorize the installation of temperature sensors on the remaining control rod drive mechanisms whenever time and plant conditions allow. The installation and monitoring of the CRDM temperatures will ensure that the mechanisms are operating properly. The test has been completed and was not considered safety significant, nor did it pose an unreviewed safety question.

4.0 SYSTEM OPERATING PROCEDURES

SOP 62

Radioactive Liquid Waste System

Due to several minor equipment/component and operating technique changes of the Radioactive Liquid Waste System, the associated system operating procedure was extensively revised. Following the changes made by CN-1433 (see Section 1.0), the system operating procedure for the radioactive liquid waste system was completely reformatted and revised to reflect the equipment, piping and operational changes. The completed procedure was reviewed for accuracy, completeness, and safe operation. The procedure was found not to be safety significant, nor did it involve an unreviewed safety question.

5.0 TABLE OF ABBREVIATIONS

ACM	Alternate Cooling Method
ANSI	American National Standards Institute
ASCO	Automatic Switch Company
ASTM	American Society for Testing and Materials
C	Compressor
CFM	Cubic Feet/Minute
CN	Change Notice (Public Service Company)
CO ₂	Carbon Dioxide
CRDM	Control Rod Drive Mechanism
CSF	Core Support Floor
E	Exchange (Heat)
F	Filter
FCN	Field Change Notice (Non-Public Service Company Initiated Change)
FE	Flow Element
FES	Final Environmental Statement
FIS	Flow Indicator/Switch
FSAR	Final Safety Analysis Report
GAT	GA Technologies
HSV	Hand Solenoid Valve
HV	Hand Valve

HVAC	Heating, Ventilating, and Air Conditioning
K	Engine (Diesel or Gasoline)
L	Line
LCV	Level Control Valve
N ₂	Nitrogen (Gas)
NRC	Nuclear Regulatory Commission
P	Pump
PCRV	Prestressed Concrete Reactor Vessel
PDIS	Pressure Differential Indicating Switch
PDT	Pressure Differential Transmitter
PDV	Pressure Differential Valve
PPS	Plant Protective System
PS	Pressure Switch
PSC	Public Service Company of Colorado
PSI	Pounds/Square Inch
PV	Pressure Valve
R	Refueling Region (When Followed By a Number)
RERP	Radiological Emergency Response Plan
RIS	Radiation Indicator/Switch
RT	Request for Test (GA Technologies)
S & L	Sargent and Lundy
SOP	System Operating Procedure
T	Tank, Special Test (Public Service Company)
TIG	Tungsten Inert Gas
TT	Temperature Transmitter
V	Valve

6.0 SYSTEM NUMBER IDENTIFICATION TABLE

2	Plant Site
11	Reactor Vessel and Internal Components
12	Control Rods and Drives
13	Fuel Handling Equipment
14	Fuel Storage
15	Fuel Shipping Equipment
16	Auxiliary Equipment
17	Reflector
18	Fuel
21	Primary Coolant System (Helium Circulators and Auxiliaries)
22	Secondary Cooling System (Steam Generators)
23	Helium Purification System
24	Helium Storage System
25	Liquid Nitrogen System
29	Gas Charging Facility
31	Feedwater and Condensate
32	Feedwater Heater Vents and Drains
33	Water Treatment
41	Circulating Water System
42	Service Water System
44	Domestic Water System
45	Fire Protection System

46	Reactor Plant Cooling Water System
47	Purification Cooling Water System
48	Alternate Cooling Method
51	Turbine Generator and Auxiliaries
52	Turbine Steam
53	Extraction Steam
54	Turbine Lube Oil Purification
55	Turbine Vents and Drains
61	Decontamination System
62	Radioactive Liquid Waste System
63	Radioactive Gas Waste System
70	Structures - General
72	Reactor Building (Vents and Drains)
73	Reactor Plant Ventilation System
75	Turbine Building (Vents and Drains, HVAC)
78	Security System
79	Technical Support Building
82	Instrument and Service Air
83	Communication System
84	Auxiliary Boiler and Heating System
90	Computer Systems
91	Hydraulic Power
92	Electrical Power
93	Controls and Instrumentation
98	Hydraulic Piping Snubbers
99	Miscellaneous



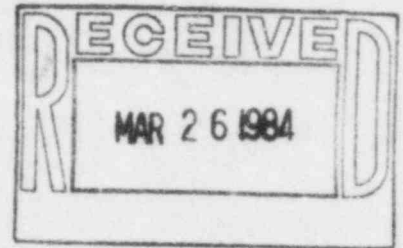
Public Service Company of Colorado

16805 WCR 19 1/2, Platteville, Colorado 80651

March 23, 1984
Fort St. Vrain
Unit #1
P-84091

50-267

Mr. John T. Collins, Regional Administrator
Region IV
Nuclear Regulatory Commission
611 Ryan Plaza Drive
Suite 1000
Arlington, TX 76011



REFERENCE: Facility Operating License
No. DPR-34

Docket No. 50-267

Dear Mr. Collins:

Enclosed please find two copies of the Report of Changes, Tests, and Experiments Not Requiring Prior Commission Approval in accordance with Part 50.59(b) of Title 10, Code of Federal Regulations, for the period of January 1, 1983, through December 31, 1983.

If you have any questions concerning this report, please contact this office.

Very truly yours,

Don Warembourg
Don Warembourg
Manager, Nuclear Production

DW/djm:

Enclosure

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