LICENSEE EVENT REPORT

CONTROL BLOCK: (1–6) (PLEASE PRINT ALL REQUIRED INFORMATION)

01	LICENSEE NAME	LICENSE NUMBER	LICENSE TYPE	EVENT TYPE
	COFSVII (7–14)	00-000000-00 (15–25)	4 1 1 2 0 (26–30)	0 3 (31–32)

01 CONT	CATEGORY	REPORT TYPE	REPORT SOURCE	DOCKET NUMBER	EVENT DATE	REPORT DATE
(7–8)	0 I (57–58)	L (59)	L (60)	0 5 0 - 0 2 6 7 (61–68)	0 5 2 1 7 6 (69–74)	(75–80)

EVENT DESCRIPTION

02 Discrepancies in seismic certifications for equipment, instru-
03 ments and components, also improper application of com-
04 ponents required to function during a seismic event.
05 Certification is being corrected. Proper application of
06 components being performed. (IE 7604)

07	SYSTEM CODE	CAUSE CODE	COMPONENT CODE	PRIME COMPONENT SUPPLIER	COMPONENT MANUFACTURER	VIOLATION
	Z Z (10)	B (11)	Z Z Z Z Z Z (12–17)	Z (43)	Z 9 9 9 (44–47)	W (48)

CAUSE DESCRIPTION

08 FSAR not specific, change in safety related list, plant
09 modifications. All safety related components are being
10 seismically certified or tested, as required.

11	FACILITY STATUS	% POWER	OTHER STATUS	METHOD OF DISCOVERY	DISCOVERY DESCRIPTION
	Z (9)	0 0 0 (10–12)	(13–44)	C (45)	Internal QA Audit (46–80)

12	FORM OF ACTIVITY RELEASED	CONTENT OF RELEASE	AMOUNT OF ACTIVITY	LOCATION OF RELEASE
	Z (9)	Z (10)	N/A (11–44)	N/A (45–80)

PERSONNEL EXPOSURES

13	NUMBER	TYPE	DESCRIPTION
	0 0 0 (9–11)	Z (12)	N/A (13–80)

PERSONNEL INJURIES

14	NUMBER	DESCRIPTION
	0 0 0 (9–11)	N/A (12–80)

OFFSITE CONSEQUENCES

15 N/A

LOSS OR DAMAGE TO FACILITY

16	TYPE	DESCRIPTION
	0 (9)	N/A (10–80)

PUBLICITY

17 N/A

ADDITIONAL FACTORS

18 N/A

8311080126 760614
PDR ADOCK 05000267
S PDR

19

NAME: [signature] PHONE: 571-7511, Ext. 1455

GPO 881-647

REPORT DATE: June 14, 1976

OCCURRENCE DATE: (Determined) May 21, 1976

FORT ST. VRAIN NUCLEAR GENERATING STATION
PUBLIC SERVICE COMPANY OF COLORADO
P. O. BOX 361
PLATTEVILLE, COLORADO 80651

REPORT NO. 50-267/76/04

Final

IDENTIFICATION OF OCCURRENCE:

Several discrepancies were found in the seismic certifications for equipment, instruments and components, and in the application of certain components required to meet seismic conditions. This is identified as an unusual event per Section 7.6, Non-Routine Reports, Part C, Paragraph 3 of the Fort St. Vrain Technical Specifications.

CONDITIONS PRIOR TO OCCURRENCE:

This section is not applicable for this event.

DESCRIPTION OF OCCURRENCE:

The fundamental seismic criteria for the Fort St. Vrain plant is that Class I structures, systems and components shall be designed for the specified operating basis earthquake and the safe shutdown earthquake. Further, these "Class I structures, systems and components include those items whose failure or damage could result in release of abnormal quantities of radioactivity, in interference with safe reactor shutdown, or in interference with adequate removal of decay heat".

In the process of purchasing spare and replacement parts the original requirements were reviewed to assure compliance with all applicable codes, standards and specifications. It was discovered in this review process that some Class I items did not have appropriate seismic certifications. These items were mainly in the category of interposing instrumentation and consisted of items such as relays, pressure switches, temperature switches, etc. In addition, items involving valves, valve operators and miscellaneous electric panels were also identified as potential problem areas based on the seismic data available.

The prime contractor, General Atomic Company (GAC), was requested to investigate the seismic certification documentation for Fort St. Vrain and to advise Public Service Company of Colorado of the results.

DESCRIPTION OF
OCCURRENCE (continued):

Shortly after that time, the cable separation and segregation problems were identified. As a part of the cable rework program, all essential equipment in the plant was reviewed and a new list of safety related equipment was developed. The new list was much more detailed and contained more equipment and components than originally required and defined in the Final Safety Analysis Report.

As a result of the problems originally identified and the possible requirement for additional certification for items in the new safety related list, a complete review was made of the seismic documentation and the application of components to meet seismic conditions. In general, this review resulted in the following findings by category:

1) Interposing instrumentation and controls (i.e., relays, miscellaneous switches or circuit components) that were not tagged equipment items and were not shown on P & I diagrams were generally not included in the seismic certification program. It was the original intent that such instrumentation was qualified because of the nature of its application (see Section 14.1.1.2 of the Final Safety Analysis Report) and as such, seismic documentation was not obtained.

2) Contrary to the requirements set forth by Section 14.1.1.2 of the Final Safety Analysis Report it was discovered that mercury switches had been used in thirty (30) different safety related applications. These switches did not meet the seismic criteria set forth.

3) Several components were qualified by similarity without appropriate justification. Examples of this type of problem were the speed modules, SM-2109, SM-2110, SM-2115, SM-2116, and SM-21161 through SM-21172.

4) Several small valves, mainly safety relief valves, that were in a category requiring them to remain functional during the seismic event were qualified only by stress analysis and not on the basis of operability.

5) Several valve operators which had previously been considered as interposing instrumentation and controls under Item 1 above were identified as having to function during the seismic event. These operators had been treated seismically on the basis of stress, but had not been appropriately analyzed and/or tested on the basis of operability.

6) Several items of equipment were not appropriately documented for seismic qualifications. Some of these equipment items were the result of new items added to the plant by various plant modifications and some items were apparently overlooked in the original effort to obtain seismic documentation.

DESCRIPTION OF
OCCURRENCE (continued):

7) Several items of equipment, components, and instrumentation were added as a result of changes in philosophy and in the development of the new safety related list. These new items were not appropriately documented for seismic qualification.

8) In addition to the seismic qualifications, the safe shutdown cooling equipment must also be environmentally qualified as set forth in the answer to Question 6.1, Amendment 25 of the Final Safety Analysis Report. As a result of the changes that have been made to the safety related list a potential problem of not having environmental qualifications for all safe shutdown cooling equipment has been identified.

APPARENT CAUSE
OF OCCURRENCE:

_____ Design	_____ Unusual Service Cond. Including Environment
_____ Manufacture	_____ Component Failure
_____ Installation/Const.	___X___ Other (specify)
_____ Operator	See Analysis of Occurrence.
_____ Procedure	_____

ANALYSIS OF
OCCURRENCE:

The following items are considered to be contributing factors leading to the problems outlined herein.

1) The original intent for the means in which interposing instrumentation and controls were to be seismically qualified as set forth in the Final Safety Analysis Report were not clear. As a result there were different interpretations of the requirements which were not recognized until specific problems were identified as outlined in this report.

2) Development of a new safety related list as a result of the essential cable rework program changed the original requirements with the addition of new items that had not been previously identified in the various lists presented in the Final Safety Analysis Report for seismic and/or environmental qualification.

3) There was an apparent weakness in the program controlling plant changes and modifications in that seismic criteria for all changes was not consistently reviewed.

4) A sampling was made of seismic data as systems were turned over to Public Service Company for operation. Problems were identified and

ANALYSIS OF
OCCURRENCE (continued):

corrected in this process based on the information available for Class I items at the time. Unfortunately, the information defining Class I items was not as detailed and complete as it should have been. Due to incomplete base information and a sampling process some items were apparently overlooked in the original turn over.

CORRECTIVE
ACTION:

The following items are keyed to the numbered paragraphs under Description of Occurrence.

1) Concerning the overall seismic certification program, a meeting was held with Nuclear Regulatory Commission Division of Licensing on May 24, 1976. The corrective action outlined in that meeting was that seismic qualification and the associated documentation for all Class I equipment, instruments, components, and structures other than those identified as interposing instrumentation and control was to be obtained prior to taking the reactor critical.

   The seismic qualification and the associated documentation for the interposing instrumentation and control items is to be substantially complete prior to exceeding 40% power. In no event will there be any outstanding seismic qualification problems beyond the first refueling.

2) All of the mercury switches have been replaced by snapaction mercoid type switches acceptable for seismic conditions.

3) The speed modules were subsequently qualified by test. Other items that were identified as being qualified by similarity were reviewed for the acceptability of the seismic qualification. In some cases additional engineering evaluations were made.

4) A generic review was made for compact relief valves, and it was found that these valves will operate under the most adverse conditions imposed by our earthquake.

5) A review was made to identify all valve operators that required seismic qualifications. All valve operators that are required to function during a seismic event will be seismically qualified on an operational basis. Seismic documentation will be available on site for all such valve operators prior to taking the reactor critical.

CORRECTIVE
ACTION (continued):

6) A review was made to identify all items of equipment for which appropriate seismic qualification and associated documentation was not available. Seismic qualification has been obtained or will be obtained prior to taking the reactor critical.

7) The change notice program will be reviewed and necessary changes to procedures will be made to insure that necessary consideration is given to seismic and environmental criteria for Class I design changes and plant modifications.

   Those items that represent additions added to the safety related list have been identified and seismic qualifications have been or will be obtained prior to taking the reactor critical.

8) The environmental qualifications at the present time meet the commitments set forth in the Final Safety Analysis Report in that all equipment and components listed in Table 6.1-1 have been environmentally qualified. For those items which have been added to the safety related list and may require environmental qualifications it is our intent to substantially complete the environmental qualifications prior to exceeding 40% power. Any items remaining open at 40% power will be subject to Nuclear Regulatory review. All environmental qualification work will be complete prior to the startup after the first refueling.

FAILURE DATA/SIMILAR REPORTED OCCURRENCES:

None

PROGRAMMATIC IMPACT:

Some slight delays may be experienced in bringing the reactor critical depending on the time required to complete the necessary actions outlined above.

CODE IMPACT:

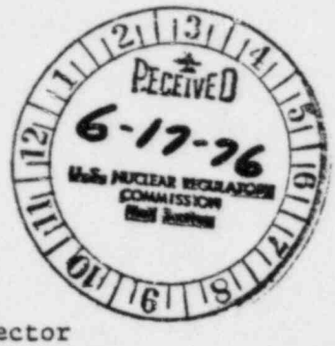
None

Submitted by: H. W. Hillyard, Jr.
Technical Services Supervisor

Reviewed by: D. W. Warembourg
D. W. Warembourg
Director, Quality Assurance

Approved by: Frederic E. Swart
Frederic E. Swart
Superintendent, Nuclear Production

Public Service Company of Colorado
P. O. Box 361, Platteville, Colorado 80651



June 14, 1976
Fort St. Vrain
Unit No. 1
P-76133

Mr. E. Morris Howard, Director
Nuclear Regulatory Commission
Region IV
Office of Inspection and Enforcement
Suite 1000
Arlington, Texas 76012

REF: Facility Operating License
No. DPR-34

Docket No. 50-267

Dear Mr. Howard:

Enclosed please find a copy of Unusual Event Report No. 50-267/76/04, Final, submitted per the requirements of the Technical Specifications.

Also please find enclosed one copy of the Licensee Event Report for Unusual Event Report No. 50-267/76/04.

Very truly yours,

Frederic E. Swart

Frederic E. Swart
Superintendent, Nuclear Production
Fort St. Vrain Nuclear
Generating Station

FES/alk

cc: Mr. Roger S. Boyd

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