

Florida Power

CORPORATION
Crystal River Unit 3
Docket No. 90-302

May 30, 1996
3F0596-31

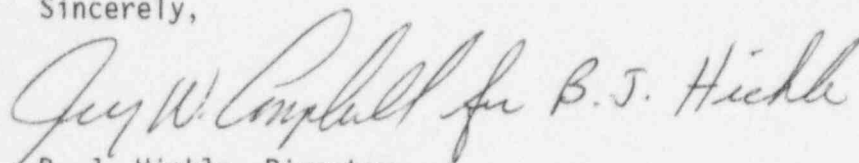
U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D. C. 20555-0001

Subject: Licensee Event Report (LER) 96-016-00

Dear Sir:

Please find the enclosed Licensee Event Report (LER) 96-016-00. This report is submitted by Florida Power Corporation in accordance with 10 CFR 50.73.

Sincerely,



B. J. Hickle, Director
Nuclear Plant Operations

TWC:ff

Attachment

xc: Regional Administrator, Region II
Project Manager, NRR
Senior Resident Inspector

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EXPIRES 6/31/95

LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HOURS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON DC 20503.

FACILITY NAME (1)

CRYSTAL RIVER UNIT 3 (CR-3)

DOCKET NUMBER (2)

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PAGE (3)

TITLE (4)

Misinterpretation Leads to Noncompliance With Technical Specification Criteria Involving Past In-Place Filter Testing

EVENT DATE (5)

LER NUMBER (6)

REPORT DATE (7)

OTHER FACILITIES INVOLVED (8)

MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)										
0	4	3	0	9	6	9	6	0	1	6	0	0	0	5	3	0	2	1	0	6
N/A										0	5	0	0	0	0	0	0	0	0	

OPERATING MODE (9)

5

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (CHECK ONE OR MORE OF THE FOLLOWING) (11)

20.402(b)

20.405(c)

50.73(a)(2)(iv)

73.71(b)

20.405(a)(1)(i)

50.36(c)(1)

50.73(a)(2)(v)

73.71(c)

20.405(a)(1)(ii)

50.36(c)(2)

50.73(a)(2)(vii)

OTHER (Specify in Abstract below and in Text, NRC Form 366A)

20.405(a)(1)(iii)

X

50.73(a)(2)(i)

50.73(a)(2)(viii)(A)

20.405(a)(1)(iv)

50.73(a)(2)(ii)

50.73(a)(2)(viii)(B)

20.405(a)(1)(v)

50.73(a)(2)(iii)

50.73(a)(2)(x)

LICENSEE CONTACT FOR THIS LER (12)

NAME

T.W. Catchpole, Sr. Nuclear Licensing Engineer

TELEPHONE NUMBER

AREA CODE

3 5 2 5 6 3 - 4 6 0 1

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)

EXPECTED SUBMISSION DATE (15)

MONTH DAY YEAR

YES (If yes, complete EXPECTED SUBMISSION DATE)

X NO

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On April 30, 1996 Florida Power Corporation's Crystal River Unit 3 (CR-3) was in MODE 5 (COLD SHUTDOWN). A review of Control Room Emergency Ventilation System (CREVS) test results revealed they were not consistent with Improved Technical Specification (ITS) 5.6.2.12 requirements for High Efficiency Particulate Air (HEPA) filters. The ITS requires an in-place test of the HEPA filters to show a penetration and system bypass < 0.05%. However, CR-3's Ventilation Filter Testing Program and implementing procedures, although consistent with pre-ITS technical specifications, only require the filter banks to remove 99% or greater of the challenge aerosol element which allows for a penetration/by-pass leakage of <= 1%. Upon discovering this discrepancy, the CREVS system was declared out-of-service. The In-Place filter testing was re-performed on May 1, 1996 using the < 0.05% criteria and yielded satisfactory results. Subsequent review of previous In-Place filter testing conducted since the March, 1994 implementation of ITS revealed that July, 1994 results did not comply with ITS criteria, thereby creating a condition prohibited by technical specifications. The event was caused by personnel error in misinterpreting new ITS criteria. Corrective actions will include a review of the Ventilation Filter Testing Program against licensing basis and design basis requirements to ensure consistency.

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CRYSTAL RIVER UNIT 3 (CR-3)

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NUMBERREVISION
NUMBER

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TEXT (If more space is required, Use additional NRC Form 366A's (17))

EVENT DESCRIPTION

On April 30, 1996 Florida Power Corporation's Crystal River Unit 3 (CR-3) was in MODE 5 (COLD SHUTDOWN). An independent third party review of CR-3's control room habitability program identified a possibly overconservative technical specification requirement and recommended a change to the requirement based on an NRC memorandum which clarified Generic Letter 83-13 "Revised Surveillance Requirements for Testing of HEPA Filter and Charcoal Adsorber Units". Improved Technical Specification (ITS) 5.6.2.12 is titled "Ventilation Filter Testing Program (VFTP)" and requires establishment of a program to implement required testing. Compliance Procedure CP-148 "Ventilation Filter Testing Program (VFTP)" was written to address the ITS requirement for the program. Investigation of above recommendation by FPC System Engineering personnel revealed that CP-148 and Surveillance Procedure SP-186 "Control Room Emergency Ventilation System (CREVS) Testing" were not consistent with ITS 5.6.2.12 requirements for High Efficiency Particulate Air (HEPA) and Charcoal Adsorber Filters [VI,FLT]. SP-186 is a surveillance leak test required to be performed every 18 months or after major maintenance or modification to verify there is no filter damage, the filters are properly installed, there is no leakage in the mounting frame and the housing, and that the filter bank (system) contains no by-passing which would compromise the function of the filters.

The ITS acceptance criteria requires for each train of the CREVS [VI], that an in-place test of the HEPA filters and charcoal adsorbers shows a penetration and system bypass < 0.05% when tested in accordance with Regulatory Guide 1.52, Revision 2, 1978, and in accordance with ASME N510-1975 at a flowrate of 43,500 cubic feet per minute (cfm) +/- 10%. The ITS criteria is consistent with requirements contained in the Final Safety Analysis Report (FSAR). However, SP-186 which was written to comply with pre-ITS technical specifications, only requires the Control Complex Emergency Charcoal Filter Banks AHFL-4A and AHFL-4B to remove 99% or greater of the challenge aerosol/gas element which allows for a penetration/by-pass leakage of <= 1%. The pre-ITS criteria was translated into CP-148 in error.

Based on the identified discrepancy, a Problem Report was generated on April 30, 1996. At 0850 hours on May 1, 1996, the Shift Supervisor on Duty (SSOD) declared the CREVS system out-of-service with a notation that no actions were applicable in MODE 5 with no fuel handling in progress. After confirming the correct interpretation of the requirement for penetration/by-pass leakage, FPC determined the need to re-perform an In-Place filter test of AHFL-4A and 4B using < 0.05% as the penetration/by-pass criteria. Testing was performed on May 1, 1996 and the results were acceptable. A subsequent review of previous In-Place testing conducted since the implementation of Improved Technical Specifications (March, 1994) revealed that testing conducted in July, 1994 did not comply with the new technical specification criteria. Surveillance Requirement SR 3.7.12.2 requires CREVS testing to be in accordance with the VFTP (ITS 5.6.2.12) in order to be considered OPERABLE. Therefore, since the July, 1994 testing was not performed in

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TEXT (If more space is required, Use additional NRC Form 366A's (17))

accordance with the VFTP, CR-3 is providing this report in accordance with 10CFR50.73(a)(2)(i)(B) to document a condition prohibited by technical specifications.

EVENT EVALUATION

The principal function of the CREVS is to provide an enclosed environment from which the plant can be operated following an uncontrolled release of radioactivity or toxic gas. The CREVS has two independent trains which consists of normal duty filter banks, the emergency filters, the normal duty and emergency duty supply fans [VI,FAN], and the return fans. The emergency filters consist of three banks each. The first bank is a roughing filter, the second bank is a HEPA filter, and the third bank is an activated charcoal adsorber for removal of gaseous activity (principally iodine). The CREVS system has a normal operation mode, recirculation mode and emergency mode. During normal operation, the system provides filtered, conditioned air to the control complex through the normal duty filter banks only. When switched to the recirculation mode, the system isolates itself from outside air and recirculates filtered air. During the emergency mode, Engineered Safeguards (ES) powered fans recirculate the air within the Control Complex [NA] through the roughing, HEPA, and Charcoal Adsorber Filters. Two signals which cause the system to automatically switch to the recirculation mode include an Engineered Safeguards Actuation System (ESAS) signal (high reactor building pressure) and a toxic gas signal (chlorine or sulfur dioxide) signal. In addition, a high radiation signal will shut down the normal supply fans. Operator action is required to start the emergency supply fans which recirculates Control Complex air through the combined roughing, HEPA and Charcoal Adsorber filters.

The test results of the In-Place filter testing performed in July, 1994 can only be partially re-evaluated for acceptability. The recorded data shows that testing of charcoal filters (AHFL-4A and AHFL-4B) resulted in < 0.01% and < 0.03% penetration respectively, and the HEPA filters were both < 0.1%. While these results show that charcoal filters met the ITS criteria, the recorded information for the HEPA filters indicated they did not. Therefore, the significance of the failure of the HEPA filters to meet technical specification requirements for penetration/by-pass leakage can only be determined based on judgement that relates previous requirements to those currently in place. Recorded data for the September, 1992 In-Place filter testing shows the HEPA filters by-pass to be < 0.03%. Therefore, testing results prior to and subsequent to the July, 1994 surveillance testing met ITS requirements.

The requirements in place prior to implementation of the Improved Technical Specifications in March, 1994 were based on R.G. 1.52, Revision 1, dated July, 1976. CR-3's pre-ITS technical specifications required verification that total bypass flow is $\leq 1\%$. R.G. 1.52, Revision 2, dated March, 1978 contains a penetration criteria of < 0.05%. A review of Generic Letter 83-13, "Revised Surveillance Requirements for Testing of HEPA Filter and Charcoal Adsorbers Units",

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as modified by NRC memorandum dated March 2, 1983 addressed to all applicants for operating licenses, reveals this criteria required clarification. The March, 1983 NRC Memorandum allowed for a penetration/by-pass leakage of $\leq 1\%$ for plants with an assumed system efficiency of 95% or less per dose calculations and NRC staff safety evaluations. CR-3's FSAR and dose calculations state the assumed efficiency for CREVS is 95%. This was discussed with NRC personnel prior to reporting of this event and it was revealed that the ITS process guided by NUREG 1430, clearly intended for In-Place testing penetration/by-pass leakage criteria to be $< 0.05\%$.

Although the filters are the same (no design changes) in 1996 as the filters tested in 1992 and 1994, the test results from 1992 and 1996 can be used to disposition the condition of the HEPA filters during the period in question. Considering the fact that the filters have been OPERABLE under previous criteria and demonstrated OPERABLE under new, tighter criteria, it can be shown that the design of the filters and their capacity has been satisfactorily established, and the filter systems would have performed their design function since 1994.

CAUSE

The primary cause of this event was personnel error by responsible FPC individuals who assumed that the requirements incorporated in ITS 5.6.12 did not constitute a change to requirements contained in procedures that implemented pre-ITS technical specifications. Regulatory Position C.5.c in R.G. 1.52, Revision 2, states "An engineered safety feature air filtration system satisfying this condition ($< 0.05\%$ penetration) can be considered to warrant a 99% removal efficiency for particulates in accident dose evaluations". The 99% removal efficiency noted in Regulatory Guide 1.52, Revision 2, was construed to be the same as the 99% removal efficiency used in pre-ITS technical specifications. After discussions with the responsible FPC engineer, it is evident that focusing on the 99% removal efficiency criteria instead of the 0.05% penetration criteria was the basis for the misinterpretation. The error is now clearly understood by the responsible individuals.

A secondary cause of this event was failure to properly validate the implementation of the new requirement for penetration/by-pass criteria contained in ITS 5.6.2.12 as part of FPC's commitment control program. The new ITS was validated against implementing procedures as satisfactory even though the inconsistency was identified; however, in applying the interpretation (misinterpretation) noted above, the conflict was not realized or resolved at that time.

IMMEDIATE CORRECTIVE ACTION

In-place testing was performed on May 1, 1996 to the specified ITS acceptance criteria (penetration/by-pass leakage $< 0.05\%$ at a flow rate of 43,500 cfm $\pm 10\%$). Test results were acceptable and the CREVS trains were declared OPERABLE.

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TEXT (If more space is required, Use additional NRC Form 366A's (17))

ADDITIONAL CORRECTIVE ACTION

1. A full-scope review of ITS requirements for ventilation filter testing against requirements contained in the Ventilation Filter Testing Program (CP-148 and SP-186) will be conducted by September 2, 1996. Additional changes beyond the 0.05% penetration/by-pass leakage criteria identified based on this review will be incorporated at that time.
2. The FSAR, ITS, and Enhanced Design Basis Document (EDBD) will be reviewed by September 20, 1996 for consistency with each other concerning ventilation filter testing requirements. Necessary changes will be identified and submitted to the appropriate FPC organization for incorporation.

ACTION TO PREVENT RECURRENCE

A complete review of the Ventilation Filter Testing Program will be performed as outlined in the above Additional Corrective Actions. Clearly, the individuals involved in this error fully understand and appreciate the consequences of the misinterpretation which contributed to this event. Therefore, no additional preventive action is considered necessary.

PREVIOUS SIMILAR EVENTS

There have been no previous reportable events involving the criteria for penetration/by-pass leakage testing of CREVS filters. There have been three previous reported events that discuss misinterpretation of technical specifications after conversion to ITS. LER 94-12 discusses a failure to recognize the addition of the diesel generator Loss of Power Start (LOPS) section which includes a First Level Undervoltage Relay (FLUR) functional test with a 31 day surveillance requirement. LER 95-18 discusses an incorrect "Note" contained in ITS SR 3.3.7.1 which allowed delayed entry into required actions during performance of the monthly functional test of the Engineered Safeguards Actuation System (ESAS) Automatic Actuation Logic. LER 96-008 discusses the failure to perform a Reactor Coolant System Water Imbalance leakage surveillance due to a misinterpretation of a "Note" in SR 3.4.12.1 which provides an exemption from its performance in MODE 4 (HOT SHUTDOWN) and until 12 hours of steady state operation in MODE 3 (HOT STANDBY).

ATTACHMENT

Attachment 1 -Abbreviations, Definitions and Acronyms

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ATTACHMENT 1 - ABBREVIATIONS, DEFINITIONS AND ACRONYMS

AHFL-4A/4B	Control Complex Emergency Charcoal Filters
ASME/ANSI N510	Testing of Nuclear Air-Cleaning Systems
CP-148	Ventilation Filter Testing Program
CR-3	Crystal River Unit 3
CREVS	Control Room Emergency Ventilation System
ESAS	Engineered Safeguards Actuation System
FSAR	Final Safety Analysis Report
Generic Letter 83-13	Revised Surveillance Requirements for Testing of HEPA Filter and Charcoal Adsorber Units
HEPA	High Efficiency Particulate Air
ITS	Improved Technical Specifications
MODE FIVE	COLD SHUTDOWN
NUREG 1430	B&W Standard Technical Specifications
Problem Report	A Problem Report documents a condition or event which impacts CR-3 and warrants evaluation, root cause analysis, or corrective actions beyond what it would receive if documented and processed by other methods.
Reg Guide 1.52	Design, Testing, and Maintenance Criteria for Post Accident Engineered-Safety Feature Atmosphere Cleanup System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants
SP-186	Control Room Emergency Ventilation System Testing

NOTES: ITS defined terms appear capitalized in LER text (e.g. MODE ONE)

Defined terms/acronyms/abbreviations appear in parentheses when first used (e.g. Reactor Building (RB)).

EIIS codes appear in square brackets (e.g. Makeup Tank [CB,TK])