Florida Power
CORPORATION
Crystal River Unit 3
Docket No. 50-302

October 28, 1996
3F1096-15

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

Subject: Licensee Event Report (LER) 96-021-00

Dear Sir:

Please find the enclosed Licensee Event Report (LER) 96-021-00 concerning delayed entry into a technical specification required action involving an inoperable Reactor Protection System channel. This report is submitted in accordance with 10 CFR 50.73.

Sincerely,

P.M. Beard, Jr.,
Senior vice President
Nuclear Operations

PMB/TWC

Attachment

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

IE22

NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES 5/31/95

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.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
CRYSTAL RIVER UNIT 3 (CR-3)	0 5 0 0 0 3 0 2	1 OF 0 6

TITLE (4)

Delayed Entry Into Technical Specification Required Action Caused by Inadequate Documentation of Out-of-Service Equipment

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)
									N/A	0 5 0 0 0
0 9	2 8	9 6	9 6	0 2 1	0 0	1 0	2 8	9 6	N/A	0 5 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)					
POWER LEVEL (10)	0 0 0	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	TELEPHONE NUMBER
	AREA CODE
T. W. Catchpole, Sr. Nuclear Licensing Engineer	3 5 2 5 6 3 - 4 6 0 1

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

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	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 September 28, 1996, Florida Power Corporation's Crystal River Unit 3 was in MODE 5 (COLD SHUTDOWN) with Reactor Coolant System (RCS) pressure at 150 pounds per square inch gauge. On September 29, 1996, while restoring a clearance for isolation of four pressure transmitters to repair a tubing leak, operators noted that one of the transmitters fed the "C" Reactor Protection System (RPS) Channel which rendered that channel inoperable. The transmitter was not required to be operable at the time the clearance was issued on September 26, 1996, but became necessary on September 28, 1996 when another clearance was issued to energize Control Rod Drive (CRD) breakers in order to dry out four CRD stators that had exhibited low insulation resistance readings. With the CRD breakers energized, they were capable of withdrawal and satisfied the technical specification requirement which requires four channels of RPS instrumentation to be OPERABLE during SHUTDOWN BYPASS operation with the CRD Control System capable of rod withdrawal. This event was identified as a condition prohibited by technical specifications and requiring an LER. There were no safety consequences identified as a result of this administrative error. The cause of the event was inadequate documentation of out-of-service equipment. Corrective actions include enhancements to procedures and use of the event as a lesson learned.

EVENT DESCRIPTION

On September 28, 1996, Florida Power Corporation's (FPC) Crystal River Unit 3 (CR-3) was in MODE 5 (COLD SHUTDOWN) with Reactor Coolant System [AB](RCS) pressure at 150 pounds per square inch gauge (psig). The Control Rod Drive (CRD) breakers [AA,BKR] were closed at 1912 hours in order to dry out four CRD stators [AA,MO] which had exhibited low insulation resistance readings during a preventive maintenance procedure which is performed on the Control Rod Drive Mechanisms [AA,DRIV](CRDMs) during shutdown and prior to startup. At 0810 hours on September 29, 1996, during restoration of another clearance by the subsequent operating shift, a condition was noted which indicated an Improved Technical Specification (ITS) required action should have been entered when the CRD breakers were energized. The Shift Supervisor on Duty (SSOD) noted that four Reactor Coolant System (RCS) pressure transmitters [AB,PT] had been isolated on September 26, 1996 to repair a leak in tubing coming off isolation valves [AB,ISV] RCV-61 and RCV-86. One of the transmitters was RC-3A-PT2 which is a narrow range (1700 to 2500 psig) transmitter that provides input to the "C" Channel of the Reactor Protection System [JC](RPS). The other instruments included a wide range (0 to 2500 psig) transmitter that provides input to the Engineered Safeguards Actuation System [JE](ESAS), a low range (0 to 600 psig) transmitter that provides input to the Remote Shutdown Panel [JL](RSP) in support of shutdown operations, and a high range (0 to 3000 psig) transmitter that provides input through the RSP to the Diverse Scram System [IO](DSS) which provides a reactor trip signal independent of RPS at a setpoint well above the RPS high pressure setpoint. At the time the tubing leak clearance had been initiated on September 26, 1996, none of the transmitters were required to be in service since the plant was in MODE 5 with the CRD breakers open. However, when the CRD system was energized, portions of the RPS were required to be OPERABLE in accordance with ITS 3.3.1 "Reactor Protection System (RPS) Instrumentation." ITS 3.3.1 requires four channels of RPS instrumentation to be OPERABLE during SHUTDOWN BYPASS operation with any CRD trip breakers in the closed position and the CRD Control System (CRDCS) capable of rod withdrawal. This ensures the capability to trip withdrawn CONTROL RODS [AA,ROD] at all times rod motion is possible.

The Shift Supervisor on Duty (SSOD) who discovered the above condition on September 29, 1996 at 0810 hours, immediately determined that the "C" Channel of RPS was inoperable and entered ITS 3.3.1, Condition A which requires the inoperable channel to be placed in bypass or trip within one hour. A Problem Report was generated to document the condition which was determined to be reportable in accordance with 10CFR50.73(a)(2)(i)(B) as a condition prohibited by technical specifications. This condition existed for approximately 13 hours.

EVENT EVALUATION

The RPS consists of four essentially identical channels. An RPS instrumentation channel measures critical plant parameters and compares these to predetermined setpoints. If the setpoint is exceeded, a channel trip signal is generated. The generation of a trip signal in any two of the four RPS channels will result in the full insertion of all CONTROL RODS. Up to one channel of RPS may be placed in CHANNEL BYPASS at any time. This condition removes that channel from the RPS trip function and revises the effective trip logic from two-out-of-four channels for a reactor trip, to two-out-of-three channels.

A portion of the protection provided by the RPS is based on four technical specification Safety Limits. These Safety Limits are set to protect the fuel cladding, prevent central fuel melt, and maintain RCS integrity. The RPS trip setpoints based on nuclear overpower, imbalance, RCS flow, pressure, and temperature are set to ensure that these Safety Limits are not violated during normal plant operation.

Additional protection is provided by the same monitored parameters as required for Safety Limit protection plus additional instrumentation and trips for faster response, and in some cases, backup protection against transients/accident conditions. Containment pressure, reactor coolant pump power, main turbine trip, and main feedwater pump trips are examples of monitored parameters used for transient protection.

A SHUTDOWN BYPASS switch [JC,HS] is provided to permit control rod drive testing when the reactor is shutdown and depressurized below the SHUTDOWN BYPASS high pressure trip setpoint allowable value of </= 1720 psig. The switch performs this function by removing the normal low pressure trip of >/= 1800 psig and substituting an equivalent high pressure trip with a setpoint of 1720 psig. This allows the RPS channels to be reset from the trip condition and allows the CRD breakers to be reset. SHUTDOWN BYPASS will allow the safety rods to be withdrawn in the COLD SHUTDOWN mode of operation. It is also used for zero power physics testing and during startup/shutdown of the reactor. SHUTDOWN BYPASS shunts the series string of trip contacts from the power/imbalance/flow, Reactor Coolant Pump Power Monitor (RCPPM), low pressure and variable low pressure trip bistables. These particular trips are bypassed to allow operation of the CONTROL RODS during the above mentioned circumstances when the RCS might be in either a low pressure condition or with less than 3 operating reactor coolant pumps [AB,P].

The reactor coolant pressure inputs to RPS are provided by two pressure transmitters in each hot leg, for a total of four. RC-3A-PT2 inputs to the "C" RPS channel 1720 psig bistable. With the pressure transmitter isolated and "C" RPS channel in SHUTDOWN BYPASS, the high RCS pressure trip from this channel was disabled. The remaining three RPS channels, however, were fully operable and capable of performing their function. With the CONTROL RODS inserted and RCS

pressure at 150 psig, the consequences of the inoperable RPS channel were negligible. An improbable series of circumstances requiring rapid deboration and achieving supercriticality would be needed to raise reactor power through the point of adding heat to increase RCS pressure to the point where the SHUTDOWN BYPASS high RCS pressure trip would be exceeded. Therefore, the failure to place the "C" RPS channel in bypass was an administrative error only, and the health and safety of the public was not affected. In fact, the action of placing the "C" RPS in CHANNEL BYPASS would duplicate the effect of isolating the pressure transmitter and would cause no change to the safety logic of the RPS system.

CAUSE

The primary cause of the event was insufficient documentation of out-of-service equipment. The Equipment Out-of-Service Log for September 28, 1996 lists the RC Loop "A" pressure transmitters associated with RCV-61 as being out of service; however, this entry does not identify that one of the pressure transmitters affects RPS Channel "C". The clearance issued for isolation of RCV-61 does identify pressure transmitter RC-3A-PT2 as an RPS Channel "C" instrument; however, this information was not carried over to the Equipment Out-of-Service Log, nor was it listed in the Shift Supervisor Relief Checklist to inform oncoming shift personnel.

The operating procedure which provides instructions for operating and controlling the Control Rod Drive Mechanisms (CRDM) includes as an initial condition, the requirement to ensure RPS and Nuclear Instrumentation are operable. The shift supervision responsible for energizing the CRD Breakers reviewed the requirements in ITS 3.3.1 as well as other instrumentation requirements including those for ITS 3.3.2, "RPS Manual Reactor Trip," ITS 3.3.3, "RPS Reactor Trip Module System," ITS 3.3.4, "CRD Trip Devices," and ITS 3.3.10, "Intermediate Range Neutron Flux," and confirmed all required surveillances were current. In addition, the shift supervision ensured satisfactory Nuclear Instrumentation readings had been taken during the performance of Surveillance Procedure SP-301, "Shutdown Daily Surveillance Log." This confirmation was determined by the responsible shift supervision to provide adequate confidence that all requirements had been satisfied. The oversight involving the RCV-61 maintenance activity could have been avoided with better documentation of the work in progress.

IMMEDIATE CORRECTIVE ACTION

The SSOD declared the "C" RPS Channel inoperable, entered the required actions of ITS 3.3.1, and placed the "C" RPS Channel in bypass.

An Incident Summary was prepared by the shift supervision responsible for energizing the CRD breakers. The Incident Summary provides a brief summary for use as part of an event investigation. This event was discussed between the

responsible shift supervision and operations management as a departure from expected standards.

ADDITIONAL CORRECTIVE ACTION

An Operations Study Book (OSB) entry has been issued to inform other operating crews of the event and lessons learned.

ACTION TO PREVENT RECURRENCE

The use of the Equipment Out-of-Service Log will be reviewed and enhanced as necessary to ensure it includes sufficient documentation during non-operating plant conditions such that operators will remain knowledgeable of equipment status.

Operating Procedure OP-502, "Control Rod Drive System" will be revised to enhance the guidance provided to ensure operability of RPS when energizing the CRD system.

PREVIOUS SIMILAR EVENTS

There have been two previously reported events during the past two years involving failure to recognize entry into a technical specification required action. LER 95-018 reported an inadequate "note" in an ITS surveillance requirement which contributed to failure to enter an action statement involving monthly channel checks of Engineered Safeguards Actuation System (ESAS) Automatic Actuation Logic. LER 96-008 reported an inadequate "note" in an ITS surveillance requirement which contributed to misinterpretation of the requirement to perform an RCS Water Imbalance surveillance prior to a mode change. A review of LER's prior to 1995 reveals there were two reported events involving SSOD errors. LER 88-005 reported the failure to recognize that a containment isolation valve had exceeded its maximum allowable stroke time during testing. LER 87-012 reported the failure to recognize a surveillance requirement for performing a breaker verification within 24 hours of a transfer of a vital bus to an alternate power source.

ATTACHMENT

Attachment 1 -Abbreviations, Definitions and Acronyms

ATTACHMENT 1 - ABBREVIATIONS, DEFINITIONS AND ACRONYMS

Clearance	A TAGGING ORDER issued for the performing maintenance, utilizing red TAGS on all BOUNDARY valves and electrical disconnects necessary to provide positive assurance that a system or component has been properly isolated and/or drained and vented.
CR-3	Crystal River Unit 3
CRD	Control Rod Drive
CRDM	Control Rod Drive Mechanism
Equip OOS Log	Equipment Out-of-Service Log used to ensure equipment and system status changes are communicated to control room operators.
ITS	Improved Technical Specifications
MODE 5	COLD SHUTDOWN
Problem Report	Documents a condition or event which warrants evaluation, root cause analysis, or corrective actions beyond what it would receive if documented and processed by other methods.
RCPPM	Reactor Coolant Pump Power Monitor
RCS	Reactor Coolant System
RCV-61	RCS Isolation Valve to Hot Leg Pressure Transmitters
RC-3A-PT2	Reactor Coolant System to Steam Generator Pressure Transmitter
RPS	Reactor Protection System
RSP	Remote Shutdown Panel
SSOD	Shift Supervisor on Duty

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])