Florida Power
CORPORATION

October 7, 1983
#3F-1083-07

Mr. John F. Stolz, Chief
Operating Reactors Branch #4
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Crystal River Unit 3
Docket No. 50-302
Operating License No. DPR-72
Generic Letter 81-14
Seismic Qualification of Emergency Feedwater System

Dear Mr. Stolz:

As requested by your letter of August 9, 1983, Florida Power Corporation is providing a status of those items required to upgrade the seismic capability of the Emergency Feedwater System (EFW).

We have reviewed the Technical Evaluation Report (TER), dated July 22, 1982. A summary of the status of those items reported incomplete in the TER follows.

TER Page 3, Paragraph 1

...the licensee identified the remaining nonseismically qualified power supply items but did not evaluate their seismic capability. However, the licensee also stated that such power supplies will be upgraded under their overall AFW system upgrade project.

FPC Summary

The AC powered valves in the EFW system have been determinated (open) or locked (open). All DC valves are powered from Seismic 1 batteries. The circuits from the batteries to the valves have been identified. FPC will walk down these circuits to determine their seismic capability. The results of the seismic evaluation will indicate which circuits will be upgraded.

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1/1

The controls for the emergency feedwater valves and pumps are located on the PSA section of the control board. The PSA section of the control board is being altered to contain the controls for EFIC. The PSA board will be seismically upgraded according to the EFIC installation schedule.

TER Page 4, Paragraph 3

Regarding the AFW system boundary, with only one exception, all branch lines which are not seismically qualified and are structurally coupled to the AFW system have been analyzed out to a point of three orthogonal restraints such that all transmitted seismic loads have been considered in the AFW system qualification. The one exception is the AFW steam supply drain tank vent connection to the turbine exhaust line. This vent line is currently under review by the licensee.

FPC Summary

The seismic capability of the Emergency Feedwater steam supply drain tank vent connection to the turbine exhaust line has not been analyzed. A field review of the piping arrangement, including measurements, has been conducted to provide the necessary data to perform the analysis. If results of the analysis indicate that additional supports are required, they will be scheduled for installation in Refuel Outage V.

TER Page 4, Paragraph 5

A walkdown of the nonseismically qualified areas identified certain power supply items to be deficient. They include (a) some inadequate cable tray supports at Elevation 95', (b) a clamp missing from a cable tray support at Elevation 119', (c) one loose hanger in the cable spreading room, and (d) three loose items in the control complex electrical support room. The licensee will add steel angle braces where necessary, replace the missing clamp, and tighten all loose items. Such corrective actions will be accomplished as part of the overall AFW system upgrade . . .

FPC Summary

FPC physically reviewed the items found deficient in the walkdown of the nonseismically qualified areas. The results of the review follow:

(a) Cable tray supports on Elevation 95'-0" of the Intermediate Building have been re-examined. Suggested bracing

for tray numbers 23 and 302 (along the north wall near column line 307) have not been installed. The need for additional supports will be analyzed. If results show need for additional supports, they will be added in Refuel Outage V.

Tray number 304, located 15'-0" west of column line 305, has been seismically supported.

(b) A clamp was still missing from conduit FWE-133. Corrective action has been initiated.

(c) Pipe hanger number MK-FSH-201, located in the cable spreading room, supports an 8" fire service line. The hanger is still loose but corrective action has been initiated.

(d) As a result of the walkdown of the cable spreading room, some additional bracing was suggested. These suggestions were:

(1) Two clamps be added across (vertical) tray number 120 to secure loose conduit ERK 28-1/2 (incorrectly identified as EKK 28-1/2);

(2) provide a frame comprised of two vertical angles near tray number 195 (at Elevation 139') to which clamps can be attached to secure conduit CPK-1; and

(3) install an angle member and clamp attached to a vertical structural frame near the north edge of the vent duct (in the area of fire damper number FD-84) to secure conduit WTS-8 (incorrectly identified as TS8-1/2).

None of these suggestions have been implemented. However, it should be noted that the cable trays and conduits in question are nonsafety related and have been determined to be not related to the EFW system. These are general housekeeping improvements and should not be considered part of the EFW seismic evaluation.

TER Page 5, Paragraph 3

Additionally, the licensee also performed walkdown of the seismically qualified areas of the AFW system. Deficiencies were identified, corrective actions were proposed or are to be identified, and

the schedule will be consistent with the overall AFW system upgrade as mentioned previously. Results of this walkdown are summarized below:

Piping - (a) A 4" stainless steel line tied into main steam line at Valve MSV-440 is supported only for deadweight. Besides, it is not properly attached to one support and a U-bolt is missing. (b) A 6" sump discharge line routed above AFW system suction line is supported only for deadweight by rod-type hangers. (c) The turbine pump exhaust line appears to be supported for deadweight only. (d) A 12" drain line routed to turbine-driven pump is supported for deadweight only by rod-type hangers. (e) The suction line from condensate hot-well is routed close to the AFW suction line from the condensate storage tank and there appears to be not enough clearance between the two lines. (f) A portion of the pump recirculation lines may not be adequately designed. (g) A line branching off the turbine pump exhaust line does not appear on drawings. (h) A lateral restraint, designed as removable support to allow future disassembly, will be added to one of the seal injection lines routed from the top of the turbine-driven pump casing to the valve EFV-51. (i) One of two silencers hung over the suction line requires a more adequate support. (j) A clamp is missing from the tubing run for pressure instrument EF-2-PI for the pipe routing on the motor-driven AFW pump and it will be replaced.

Primary Water Source and Supply Path - (a) Some new lines have been connected to the condensate storage tank which must be reviewed for sufficient seismic support. (b) The neutralizing tank appears too close to the condensate storage tank. A review of the neutralizing tank's foundation will be done and, if necessary, a barrier between the two tanks may have to be added.

FPC Summary

FPC physically reviewed the items found deficient in the walkdown of the seismically qualified areas of the EFW system. The results of the review follow.

Piping

(a) The 4" stainless steel line tied into a main steam line at valve MSV-440 remains supported for deadweight. Seismic analysis will be completed and supports found necessary will be installed.

(b) The 6" sump discharge line routed above the EFW suction line (from pipe support numbers MK-SDH-100 thru MK-SDH-110) has not been analyzed for seismic capability. Seismic analysis will be completed and supports found necessary will be installed in Refuel Outage V.

(c) The 12" EFW turbine exhaust line has been analyzed and meets Seismic 1 criteria.

(d) The 12" roof drain line (in the area from pipe support numbers MK-RDH-119 thru MK-RDH-122) routed over a main steam supply line to the EFW turbine-driven pump has not been analyzed for seismic capability. Seismic analysis will be completed and supports found necessary will be installed in Refuel Outage V.

(e) The line routed from the turbine-driven pump exhaust line to a flash tank (NOTE: this line is not the EFW suction line from the hotwell) is routed close to the EFW suction line from the condensate storage tank. No changes have been initiated to the piping and supports of this line. Analysis of the seismic capability of the line will be conducted. Additional support will be installed in Refuel Outage V if results of analysis indicate need (see FPC summary to TER, Page 4, Paragraph 3).

(f) The EFW pump recirculation lines have been reviewed. It has been determined that the lines are seismic.

(g) The line from the EFW turbine exhaust line to a flash tank has not been analyzed for seismic capability. Seismic analysis will be completed and supports found necessary will be installed (see FPC summary to TER, Page 4, Paragraph 3).

(h) A north-south restraint has been added on the horizontal pipe running east-west above the EFW turbine-driven casing. No evaluation of seismic capability was found. An evaluation to determine the seismic capability of the pipe and restraint will be completed in the first quarter of 1984.

(i) The silencers have been completely removed.

(j) The clamp on the tubing run for pressure instrument EF-2-PI is still missing. Corrective action has been initiated.

Primary Water Source and Supply Path

(a) The new lines on the Condensate Storage Tank (CST) have been reviewed and measured for the purpose of determining seismic capability. If results of analysis indicate inadequate seismic capability, appropriate modifications will be initiated.

(b) Analysis of the neutralizing tank are completed. The tank is not seismically qualified. FPC is evaluating methods to protect the Condensate Storage Tank from a failure to the neutralizing tank.

The evaluation will be completed by the end of 1984.

Attachment 1 provides the scheduled completion dates for all items discussed here.

If you have any further questions, please contact this office.

Sincerely,

E C Simpson

E. C. Simpson
Director
Nuclear Operations Engineering and Licensing

DiCesaro(Ltr)DN35-2

cc: Mr. J. P. O'Reilly, Regional Administrator
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SCHEDULE FOR COMPLETION OF
SEISMIC UPGRADES TO EFW SYSTEM

(ATTACHMENT 1)

ITEM NO.		DESCRIPTION	SCHEDULED MODIFICATION/REPAIR
TER Pg. 3, Para. 1		Power supply circuits	Refuel Outage V
TER Pg. 4, Para. 2		EFW steam drain tank connection to turbine exhaust	Refuel Outage V
TER Pg. 4, Para. 5			
	(a)	Cable tray supports	Refuel Outage V
	(b)	Missing clamp	In progress
	(c)	Loose pipe hanger	In progress
	(d)	Cable spreading room	1st quarter of 1984
TER Pg. 5, Para. 3			
Piping	(a)	4" line at MSV-440	Refuel Outage V
	(b)	6" sump discharge line above EFW suction line	Refuel Outage V
	(c)	12" EFW turbine exhaust line	Completed
	(d)	12" roof drain line above steam supply to turbine-driven pump	Refuel Outage V
	(e)	EFW steam drain tank connection to turbine exhaust	Refuel Outage V
	(f)	EFW pump recirculation lines	Completed
	(g)	EFW steam drain tank connection to turbine exhaust	Refuel Outage V
	(h)	Pipe running east-west above turbine-driven pump casing	1st quarter of 1984
	(i)	Silencers	Completed
	(j)	Missing clamp	In progress
Primary Water Source & Supply Path	(a)	New lines on condensate storage tank	Refuel Outage V
	(b)	Neutralizing tank (protection of CST)	4th quarter of 1984[1]

[1] Evaluation to be completed and modification schedule to be determined

DiCesaro(Att.1)DN35-2