



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W., SUITE 2900
ATLANTA, GEORGIA 30323-0188

February 24, 1997

MEMORANDUM TO: File *John P. Jaudon*
FROM: John P. Jaudon, Director
Division of Reactor Safety
SUBJECT: MINUTES FOR THE CRYSTAL RIVER RESTART PANEL
SIXTH MEETING HELD FEBRUARY 12, 1997

The Crystal River Restart Panel met at the facility site on February 12, 1997. The following panel members and others were present:

Panel Members: John P. Jaudon, RII, Chairman
Frederick J. Hebdon, NRR, Vice Chairman
Stephen J. Cahill, Senior Resident Inspector
Laksminaras Raghaven, Project Manager

Others: Robert P. Schin, Reactor Inspector, RII
Billy R. Crowley, Reactor Inspector, RII¹
McKenzie Thomas, Reactor Inspector, RII²
Larry S. Mellen, Reactor Inspector, RII³
Paul J. Fillion, Reactor Inspector, RII⁴

The inspection team, which was onsite to review restart items, provided a mid-week debrief of their findings. Salient points made in this debrief included that work packages and welding found in the field were good. Also it was noted that engineering work done in response to Generic Letter 96-06 appeared to be good. It was also noted that there was a problem being developed that indicated that the temperature controls and design for some buildings and areas did not appear to match the specific temperature requirements for some instruments located in the buildings and areas. The inspectors will continue to pursue this issue.

The panel reviewed the Restart Task Checklist and the Issues Checklist. Some items were characterized as "Not Applicable" [NA]; others had responsibility assigned; for many other items for which there was activity, the panel characterized the status as "On-going" [O] on these. All three restart list are attached for information.

¹ Only present for the discussion of inspection status

² See Footnote 1.

³ See Footnote 1

⁴ See Footnote 1



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The panel noted that the licensee was still developing plans for how to address some design issues. It was concluded that when the licensee made these determinations, it would be appropriate to hold a meeting with the licensee in Headquarters so that a broad spectrum of NRC management could be briefed on the proposed resolution of the various technical issues. It was also suggested that the frequency of panel meetings was too often for the point in recovery at which the plant was now; therefore, the frequency of meetings should be adjusted accordingly. The next meeting was tentatively set for the week of March 21 onsite.

The Chairman noted that the schedule for the conduct of Maintenance Team inspections in Region II was under review, and it had been necessary to move another utility into the May time slot originally scheduled for Crystal River. The inspection of Crystal River would be re-scheduled.

The panel also discussed various issues expected to be raised at the public meeting scheduled with the licensee the same day as the panel meeting. The record of the public meeting will be docketed by separate correspondence.

Docket: 50-302

Attachments:

- A. Restart Open Item Check List
- B. Crystal River Issues Checklist
- C. Crystal River Restart Task Checklist

ISSUE	DESCRIPTION	AREA	NRC LEAD	IR/SRR	LICENSEE STATUS	COMMENTS	NRC STATUS
LICENSEE'S OTHER RESTART ITEMS							
RMS 29/30	Seismic monitoring of HR Rad Monitor	1	Lenahan		D-19		R
BWST NPSH	NPSH concern with ECCS pumps when SFP pumps are running in BMS and Rectic	1	Thomas		D-18		R
FIVE AREAS OF CONTINUING CONCERN, WITH IPAP RECOMMENDED INSPECTION AND RII RECOMMENDED ADDITIONS							
Management Oversight - IPAP Recommended Inspection	- NRC inspect Problem Identification; focusing on QA audits and the Problem Reporting system. - Increased inspection of Problem Analysis and Evaluation; focusing on root cause evaluations.	5	Crowley/Thomas		OP-2, OP-3	Inspect New PC system	R
Marginally Effective Engineering Organization - IPAP Recommended Inspection	- NRC inspect Engineering Problem Identification and Resolution; with emphasis on licensee evaluations for significant issues and work backlogs. - Also inspect Quality of Engineering; with emphasis on 10 CFR 50.59 screening and safety evaluations. Accuracy of the FSAR, and management oversight.	4	Schin		OP-4 OP-6	50.59	R
Lack of Adequate Knowledge of the Design Basis - IPAP Recommended Inspection	- NRC inspect Engineering Safety Focus; focusing on proper identification of discrepancies with the plant's design basis in the corrective action system. - Also inspect Engineering Problem Identification and Resolution; focusing on programs for identifying design basis issues and capturing them in the corrective action program. - Also inspect Quality of Engineering; focusing on sensitivity/understanding by the engineering/licensing staff of the plant's design basis. - Also assess the design margin, including the licensee's "extent of condition" reviews	1	Schin		OP-7, OP-8, D-13, D-15, D-16		R
Lack of Sensitivity for the Need to Comply with Regulations - IPAP Recommended Inspection	- NRC inspect 50.59s, operability, reportability	2	Schin		OP-5, OP-4		R
Operator Performance - IPAP Recommended Inspection	- NRC inspect Safety Focus; focusing on communication within operations. Communication with other site groups, and overtime	3	RI				R

ISSUE	DESCRIPTION	AREA	NRC LEAD	IR/SER	LICENSEE STATUS	COMMENTS	NRC STATUS
INSPECTOR FOLLOWUP SYSTEM							
URI 95-02-02	Control room habitability envelope leakage. Excessive leakage paths through doors, dampers, and drains due to design errors and lack of surveillances/preventive maintenance	1	Schin			See TIA 95003; FPC TS Change Request No. 208 of 8/28/96; LERs 96-04, 94-10, 95-01, 95-04-01, 95-09; IRs 95-02, 95-09, 95-11, 95-16, 95-21; FPC ltrs. of 5/26/95 and 10/23/95	R
URI 96-01-02	Discrepancies in the high pressure injection design basis analysis	1	RI		D-9	See CR3 D.I. 1; CR3 D.I. 2	R
URI 96-04-01	Discrepancies in the EDBD and the PSAR regarding the prevention of post-LOCA boron precipitation	1	Crowley	IR 96-19		See EEI 96-19-07.	R, C
URI 96-05-02	Design concerns with main steam line hangars used in seismic and other dynamic load applications	1	Lenahan, Raghavan			See VIO 96-05-01; Coordinate with L. Raghavan	R
URI 96-06-03	Non-safety related transfer switch used in ES status indicating light circuitry	1	Fillion		D-21		R
URI 96-12-01	Emergency Feedwater low NPSH to both pumps due to postulated single failure	1	Schin	IR 96-19	D-17	See CR3 D.I. 5; CR3 D.I. 7; EEI 96-19-03, -04, -05, -06	R, C
URI 96-17-03	Failure to conduct required Technical Specification surveillance testing on safety related circuitry (GL 96-01)	4	Fillion			See MFA #L601 (GL 96-01)	R
URI 96-201-01	Long term plant cooldown following a small break LOCA assuming a single failure in the decay heat drop line	1	Crowley/NRR		D-3	See CR3 D.I. 3; See IR 96-11. NRR taking responsibility for this item.	R
URI 96-201-02	NPSH for building spray pump has very little margin, and some calculation factors were nonconservative	1	Lenahan		D-4	See CR3 D.I. 4	R
URI 96-201-03	Operating curves 16, 17, and 18 in OP-103B are not validated by licensee	4	Hopper		O-1		R
URI 96-201-04	Nonsafety-related positioners on safety-related valves	1	Thomas		R-7, D-10	See IR 96-08	R
URI 96-201-05	Service water system heat loads did not consider maximum input heat (OP-103B, Curve 15)	1	Crowley	IR 96-19	O-1	See EEI 96-19-08	R, C
URI 96-201-07	EDG not protected against water spray from failure of fire protection deluge system in EDG room	1	Fillion				R
LER 95-13-01	Design deficiency may cause makeup tank vortexing resulting in failure to meet Appendix R requirements	1	Mellen			LER 95-13-00 closed in IR 96-06	P
LER 96-18-00, LER 96-18-01	Failure to verify RB penetrations closed per TS	1	RI		O-2		
EEI 96-10-01	Four examples of failure to follow refueling procedure FP-203	3	Hopper			**	
EEI 96-10-02	Failure to assure root cause analysis and corrective actions taken to preclude repetition were adequate after refuel incident (no PR issued)	5	Hopper			**	R

ISSUE	DESCRIPTION	AREA	NRC LEAD	IR/SER	LICENSEE STATUS	COMMENTS	NRC STATUS
EI 96-12-02	EDG loading USOs due to inadequate 10 CFR 50.59 evaluations; three examples (one modification & two procedure changes)	4	Schin/ Fillion		R-2, D-6, D-14, D-15, OP-5	Enforcement conference 1/24/96. See CR3 D.I. 5; CR3 D.I. 6	R
EI 96-12-03	Inadequate corrective actions for 10 CFR 50.59 evaluation errors; two examples	5	Schin			Enforcement conference 1/24/96	R
EI 96-12-04	Use of unverified calculations to support modifications. NRC inspect licensee's extent of condition reviews.	4	Schin		OP-6	Enforcement conference 1/24/96	R
EI 96-19-01	Three inadequate procedures for containment penetration surveillances	4	RI			Enforcement conference 1/24/96	R
EI 96-19-02	Inadequate corrective actions for inadequate containment penetration surveillances	1	RI			Enforcement conference 1/24/96	R
EI 96-19-03	EPW NPSH USQ due to inadequate 10 CFR 50.59 safety evaluation for a modification	1	Schin			Enforcement conference 1/24/96	R
EI 96-19-04	Failure to update applicable design documents to incorporate EPW design information (EFP-2 assumed operating when EFP-1 trips at 500# RCS pressure)	1	Thomas			Enforcement conference 1/24/96	R
EI 96-19-05	Failure to include applicable design information in the design input requirements for an EPW modification (EFP-2 continuing to operate after EFP-1 trips at 500# RCS pressure and hydraulic requirements)	1	Thomas			Enforcement conference 1/24/96	R
EI 96-19-06	EPW USQ due to removing the automatic open signal from ASV-204, reducing the reliability of EFP-2	1	Thomas			Enforcement conference 1/24/96	R
EI 96-19-07	Inadequate 50.59 evaluation for post-LOCA boron precipitation control	1	Crowley			Enforcement conference 1/24/96. Verify procedures and documentation adequate prior to restart.	R
EI 96-19-08	Error in design calculations for SW system heat loads	1	Crowley			Enforcement conference 1/24/96	R
EA 95-16 (was EI 95-02-04)	Use of non-conservative trip setpoints for safety-related equipment (SLIII). Additional examples identified in IR 95-16.	6, 1	Mellen			See IR 95-16, IR 95-21	R
EA 95-126, NOV I.A (was EI 95-22-01)	Nine instances where operators violated procedures for MUT pressure/level (SLIII).	6, 3	Schin			See IR 96-04	R
EA 95-126, NOV I.B (was EI 95-22-02)	Conduct of unauthorized tests of MUT without 10 CFR 50.59 evaluation (SLIII). Additional examples (four tests) identified in 1/18/96 letter titled EA 95-126 and EA 95-185. (See URI 96-04-08)	6, 3	Schin			See IR 96-04	R
EA 95-126, NOV I.C.1 (was EI 95-22-03)	Failure to take adequate corrective actions for operator concerns regarding OP-103B, Curve 8, for MUT pressure/level limits (SLIII)	6, 5	Schin				R
EA 95-126, NOV I.C.2 (was EI 95-22-03)	Corrective actions for an inadequate Curve 8 (two STI's and a revised Curve 8A & 8B) were also incorrect (SLIII)	6, 5	RI		O-1		R

ISSUE	DESCRIPTION	AREA	NRC LEAD	IR/SER	LICENSEE STATUS	COMMENTS	NRC STATUS
EA 95-126, NOV I.D.1 (was EEI 95-22-04)	Design controls failed to ensure adequate safety margin for HPI pumps for certain LOCA scenarios (SLIII)	6.1	RI		OP-6		R
EA 95-126, NOV I.D.2 (was EEI 95-22-04)	Swapover of ECCS pumps' suction from BWST (at five feet) to reactor building sump was inadequate (SLIII)	6.1	RI, Mellen				R
EA 95-126, NOV II.A (was EEI 95-22-04)	EOPs allowed single LPI pump to supply two HPI pumps, with insufficient NPSH for LPI pump (SLIII)	6.1	RI				R
EA 95-126, NOV II.B (was EEI 95-22-03)	Failure to take adequate corrective actions for tank volumes/level/suction point (SLIV)	6.5	RI				R
EA 95-126, NOV II.C (was EEI 95-22-03)	Failure to ensure fire water storage tank contained adequate volume of water (SLIV)	6.1	RI				R
VIO 93-16-07	Inadequate EOP and AP procedures	6.3	Hopper		0-3	See IR 96-04, IFI 96-04-03, IR 96-08	R
VIO 95-16-03	Inadequate procedure for operation of the makeup pump 1A cooling water	6.1	RI				R
VIO 95-21-03	Failure to isolate the class 1E from the non-class 1E electrical circuitry for the RB purge and mini-purge valves	6.1	Thomas/ RI				R
VIO 96-01-01	Inadequate corrective action for HPI flow indication problem	6.5	RI				R
VIO 96-01-06	Failure to correctly translate design basis of SW system into procedures, drawings, and instructions	6.1	RI				R
VIO 96-04-02	Failure to take prompt corrective action in revising procedure VP-580, Plant Safety Verification (for STAs). VP-580 contained outdated and incorrect information.	6.5	Hopper				R
VIO 96-05-01	Failure to create a PR and OCR for damaged main steam line hangars	6.5	Lenahan, Raghavan			See URI 96-05-02; Coordinate with L. Raghavan	R
VIO 96-05-05	Failure to follow procedures for updating design basis documents	6.4	Crowley		OP-8		R
VIO 96-05-07	Inadequate receiving inspections for battery chargers (vendor tests)	6.4	Schin				R
VIO 96-05-08	Failure to follow purchasing procedures for inverters	6.4	Schin				R
VIO 96-06-02	No procedure for demineralized water flush performed by operators on boric acid addition lines	6.3	RI				R
VIO 96-06-04	No evaluation on non-FSAR vital battery charger configuration	6.4	RI				R
VIO 96-06-07	PR not initiated to resolve CREVS test failure	6.5	Lenahan				R

ISSUE	DESCRIPTION	AREA	NRC LEAD	IR/SER	LICENSEE STATUS	COMMENTS	NRC STATUS
VIO 96-08-01	Corrective action not taken on make-up system audit findings & excessive vibration on spent fuel pool pump cooling fan motor	6, 5	RI				R
VIO 96-09-03	Failure to perform a 10 CFR 50.59 safety evaluation for changes to procedures described in the FSAR for controlling dissolved hydrogen concentration in the RCS	5, 3	Thomas				R
VIO 96-09-04	Failure to update operating curves to reflect 1981 power uprate	6, 4	Thomas				R
VIO 96-09-05	Failure to incorporate design change of MUV-64 into operations procedures	6, 4	Thomas/ Crowley		Licensee Denied Vio		R
VIO 96-09-06	Three examples of design control errors (erroneous calculation inputs and ISI boundary)	6, 4	M. Miller		OP-8		R
VIO 96-09-07	Untimely corrective actions for the EPIC system concerns and problems	6, 5	Thomas				R
VIO 96-11-04	Reactor building sump not constructed in accordance with approved construction drawings	6, 1	R ¹				R
VIO 96-15-02	Failure of reactor coolant pump oil collection system to retain oil leaking from reactor coolant pump	6, 7	W. Miller				R
VIO 96-20-01	Failure to adhere to reactor coolant system cooldown limits	3	RI				
VIO 96-20-02	Failure to follow procedure AI-400C for review and development of Maintenance Procedure PM-191, Main Turbine/Generator, Feedwater Turbine Layup	7	RI				
IFI 95-15-01	Design requirements for nitrogen overpressure (service water)		L. Mellen			Need to review licensee's calculation & conclusion. See IR 95-21	R
IFI 95-15-02	Design requirements for dynamic LOCA effects	1				See IR 95-21 and TIA 96-013	R
IFI 95-15-03	Design requirements for reactor coolant pump cooler failure	1				See IR 95-21 and TIA 95-014	R
IFI 95-15-04	Code requirement for thermal relief valves on decay heat removal heat exchangers	1				See IR 95-21 and TIA 96-014	R
IFI 95-14-05	Relief valves removed from heat exchangers	1				See IR 95-21 and TIA 96-014	R
IFI 96-03-15	Evaluate the licensee's revised TS Bases and related 10 CFR 50.59 analysis for HPI flow indicators	2	RI				R
IFI 96-17-02	Potential for HPI/LPI recirculation resulting in make-up tank overflow	1	RI			See CR3 D.I. 1	R
IFI 96-17-04	Adequacy of 10 CFR 50 Appendix R fire study and documentation	1	W. Miller				R
IFI 96-201-11	Design basis for decay heat/core flood/reactor coolant piping temperature	1	Lenahan			Identified in IPAP report as IF-96-201-01	R
IFI 96-201-12	Conduit sizing criteria - jamming ratio not considered	1	Fillion			Identified in IPAP report as IF-96-201-02	R

ISSUE	DESCRIPTION	AREA	NRC LEAD	IR/SSK	LICENSER STATUS	COMMENTS	NRC STATUS
IPI 96-201-13	Cable ampacities - several cables exceed rating, including DHR-1	1	Fillion			Identified in IPAP report as IF-96-201-03	R
IPI 96-201-14	EDG protective trips not bypassed during emergency mode of operation	1	Fillion		D-12	Identified in IPAP report as IF-96-201-04	R
IPI 96-201-15	Verification of motor starting data	1	Fillion			Identified in IPAP report as IF-96-201-05	R
IPI 96-201-16	Coordination of Second Level undervoltage relay (SLUR) setting vs. inverter operation	1	Fillion			Identified in IPAP report as IF-96-201-06	R
IPI 96-201-17	Coordination of SLUR and fuse protection	1	Fillion			Identified in IPAP report as IF-96-201-07	R

MULTI-PLANT ACTIONS

MPA #LS07; GL 95-07	Pressure locking and thermal binding of safety-related gate valves. Currently in staff review. An RAI is outstanding. Expected completion?	2	NRR				R
MPA #LS01; GL 95-01	Testing of safety-related logic circuits - Licensee response in staff review. More details are required. This issue requires attention.	2	Fillion		R-1	11/96 - the licensee has identified existing deficiencies that must be fixed prior to restart	R
MPA #LS03; GL95-03	Circumferential cracking of SG tube flaws. Licensee response in staff review.	2	Blake/NRR				R

LICENSEE AMENDMENT/RELIEF REQUESTS

COBE	Control complex habitability envelope - including TS-206 and TIA 95-03 need to be addressed. Licensee submittal does not provide adequate TS action.	2	Schin/NRR				R
USQs	Licensee request and NRC review and issue license amendments for all Unreviewed Safety Questions (USQs)		NRR		R-2, R-4		R
USQ	EDG Load Update		Fillion/ NRR		R-2	See ERI 96-12-02, CR3 D.I. 5	R
USQ	ASV 204		Thomas/ NRR		R-4	See ERI 96-19-04, CR3 D.I. 5	R
USQ	2R-4S-FI		Crowley/ NRR		R-5	See URI '6-201-01, ERI 96-04-01	R
USQ	EDG Load List Update		Fillion/ NRR		R-6	See ERI 96-12-02, CR3 D.I. 5	R
USQ	ITS 3.0.3 relief for IPI/RN to allow modification of air operators for DCV 17, 18, 177, 178		Thomas/ NRR		R-7	See URI 96-201-04	R
ILMT	Conduct an ILMT or seek an Amendment to utilize Method B of Appendix J to 10 CFR 50		NRR				

ISSUE	DESCRIPTION	AREA	NRC LEAD	IR/SER	LICENSEE STATUS	COMMENTS	NRC STATUS
OTHER ISSUES							
LTOP	Current TS does not address LTOP prevention or mitigation. On the basis of GL 88-11, the licensee submitted information to demonstrate that LTOP in B&W plants have less than 1 in 100 reactor years probability of occurrence and as a result per GL 88-11 non-appendix G methodology can be used for PT curves. Such a PT curve would provide for higher LTOP enable pressure and temperature and would provide operational flexibility. Staff denied the request in 1995 and requested a revised response. The licensee expects to respond late 1997.	2				R, system branch will send letter to licensee that they have to submit TS.	R
Appendix R	Appendix R design basis issues review by FPC consultant. NRC review open Appendix R issues to assure that there are no restart or operability issues imbedded in them.		W. Miller/ Fillion/ NRR		D-11		R
Operator Workarounds	NRC review operator workarounds list to assure that there are no restart or operability issues contained in them		RI		M-2	See VIO 96-09-07	R
50.54f Letter	NRC review licensee's 50.54f letter response (due 2/9/97) on design bases		NRR				R
License Conditions	Verify license conditions are met		RI				R
RC Loop Piping Analyses	In a survey inspection, the staff noted that certain branch pipes off the primary coolant loop were not analyzed as Code Class 1 pipe (i.e., no fatigue analysis) as required by the Code. Need NRR technical branch's opinion on this	2	NRR				R

Sources for issues include: IFS, SIMS, NUREG 1435 (Status of Safety Issues at Licensed Power Plants), Resident's OIL, PM's OIL

NOTE: Open allegations, OI investigations, and emerging/draft issues are listed separately.

CRYSTAL RIVER 3 ISSUES CHECKLIST

N ITEMS (INSPECTION PRIOR TO RESTART IS NOT NEEDED)

Status as of February 24, 1997

ISSUE	DESCRIPTION	AREA	NRC LEAD	IR/SER	LICENSEE STATUS	COMMENTS	NRC STATUS
LICENSEE'S RESTART LIST OF DESIGN-RELATED ISSUES (D.I.s)(per 10/28/96 ltr from FPC)							
LICENSEE'S OTHER RESTART ITEMS							
OTSG Tubes	Adequacy of OTSG tube stress-relieved rolled joints is questioned. BMOG analysis of a Davis-Besse pulled OTSG tube, current test data, and limited field experience conflict with test data from 1972 which "qualified" a stress-relieved rolled joint.	7				See licensee Precursor Card PC 96-5077 of 11/6/96. (No TIA)	N (G)
FIVE AREAS OF CONTINUING CONCERN, WITH IPAP RECOMMENDED INSPECTION AND RII RECOMMENDED ADDITIONS							
INSPECTOR FOLLOWUP SYSTEM							
URI 95-21-04	Excessive cooldown rate	3		IR 96-20		See CR3 D.1. 1.	N (S), C
URI 96-03-04	Measuring of percent through-wall indications with an unqualified procedure	7				See IR 96-06. Generic issue being addressed by NRR. (no TIA)	N (G)
URI 96-03-05	Eddy current sample expansion based on degraded tube percentages	7				See IR 96-06.	N (S)
URI 96-06-10	Justification for removal of Thermo-Lag protection from the source range instrumentation	1					N (S)
URI 96-07-03	Incorrect information provided by contractors	7				**	N (S)
URI 96-201-06	Preferred offsite electrical power source with plant shut down (500 kv switchyard) is not qualified. Note: Until this issue is resolved, licensee is not using 500 KV switchyard as an electrical power source.	1					N (S)
URI 96-201-09	Testing to qualify relays beyond manufacturers' ratings was inadequate	1					N (S)
LER 93-02-02. LER 93-02-03	Switchyard cable failure caused degraded voltage of Class 1E electrical buses and actuation of EDG	7				LER 93-02-01 closed in IR 95-09.	N (I)

ISSUE	DESCRIPTION	AREA	NRC LEAD	IR/SER	LICENSEE STATUS	COMMENTS	NRC STATUS
LER 94-06-01, LER 94-06-03, LER 94-06-04, LER 94-06-05	Deficiency in understanding of technical requirements leads to nonconservative RPS setpoint and potential violation of TS	2				LER 94-06-00 closed in IR 95-16. See EA 95-16.	N (D)
LER 95-09-00	Minimal release during sulfur dioxide delivery causes actuation of toxic gas monitor resulting in control room emergency ventilation actuation	7				See IR 95-11.	N (I)
LER 95-10-01	Inadequate procedure causes low cooling water flow to makeup pump resulting in operation outside the design basis	1				LER 95-10-00 closed in IR 95-16. See also URI 95-11-02, VIO 95-16-03.	N (I)
LER 95-17-00	SW flow to control room coolers controlled by air operated valves which could fail open	1				See IR 95-16, VIO 96-01-06.	N (D)
LER 95-18-00, LER 95-18-01, LER 95-18-02	Inadequate TS note allowed delayed entry into TS LCO	2				See NCV 95-18-05.	N (I)
LER 95-19-00	Leak instrumentation for SW flow to RBCUs incapable of measuring 90 gpm	1				See IR 95-18.	N (I)
LER 95-23-01, LER 95-23-02	Inconsistent design assumptions cause building spray flow rates to be outside design basis	1				LER 95-23-00 closed in IR 96-04.	N (I)
LER 95-25-00, LER 95-25-01	Inadequate isolation of safety/non-safety related circuits	1				See VIO 95-21-03.	N (D)
LER 95-28-00, LER 95-28-01	BWST vacuum breaker has inadequate relief capacity	1				See IR 95-21.	N (I)
LER 96-01-01	EFIC control circuits misrouted: Appendix R concern	1				LER 96-01-00 closed in IR 96-04. See also NCV 96-01-03.	N (I)
LER 96-02-00	Minipurge valve has safety/non-safety related circuits without isolation	1				See VIO 95-21-03.	N (I)
LER 96-03-00, LER 96-03-01	RCS cooldown rate exceeded during cool-down	3				See URI 95-21-04.	N (I)
LER 96-04-00	CCHE control dampers found damaged & leaking	1				See URI 95-02-02, IR 95-21.	N (D)
LER 96-05-01	SW flow to RBCUs could exceed design	1				LER 96-05-00 closed in IR 96-04. See also VIO 96-01-01.	N (D)
LER 96-06-00, LER 96-06-01	HPI instrument error could result in HPI pump runoff	1				See IR 95-20, IR 96-04, CR3 D.I. 2.	N (D)
LER 96-07-00, LER 96-07-01	HPI line SBLOCA/LOOP/loss of dc bus could have inadequate HPI flow instrumentation	1				See IR 96-01, CR3 D.I. 2.	N (D)
LER 96-08-00	Ambiguous TS note results in not performing RCS leak surveillance prior to Mode 2	2					N (S)
LER 96-09-00	Failure to reattach instrument tubing to seismic supports after modification leads to operation outside design basis	1				See URI 96-03-06, IR 96-05.	N (I)
LER 96-10-00	Low flow in SW system cooled components causes operation outside design basis	1				See VIO 95-16-03.	N (D)
LER 96-11-00	Personnel error causes testing deficiency resulting in condition prohibited by improved TS (GL 96-01 issues)	1				See MPA #L601 (GL 96-01).	N (D)

ISSUE	DESCRIPTION	AREA	NRC LEAD	IR/SER	LICENSEE STATUS	COMMENTS	NRC STATUS
LER 96-12-00, LER 96-12-01, LER 96-12-02	Operation outside design basis caused by battery chargers having inadequate test results accepted in error	4				See VIO 96-05-07.	N (D)
LER 96-13-00	Operator error resulted in the inadvertent actuation of DCP-1A	3				See NCV 96-03-02.	N (I)
LER 96-15-00	Personnel errors cause cable separation/isolation concerns resulting in operation outside the design basis (toxic gas monitors)	1				See IR 96-04.	N (I)
LER 96-16-00	CREVS filter testing / id not meet TS specs	2	RI				N (S)
LER 96-19-00	Non-safety related switch used in safety related wiring for ES status lights	1				See URI 96-06-03.	N (D)
LER 96-20-00	Unreviewed safety questions concerning EDG overloading caused by interpretation of regulatory requirements	4			R-2, D-6, D-14, D-15, OP-5	See EEI 96-12-02.	N (D)
LER 96-23-00	Personnel error leads to missed surveillances resulting in violation of Technical Specifications (missed remote shutdown panel EFW pump pressure instrument channel check)	2				See VIO 96-15-01.	N (D)
LER 96-24-00	Plant modification causes unanalyzed condition regarding emergency feedwater	1				See URI 96-12-01.	N (D)
LER 96-25-00	Personnel error causes testing deficiency resulting in condition prohibited by Technical Specifications (12 contacts in ES logic were not being tested)	1				See MPA #L601 (GL 96-01).	N (D)
VIO 94-25-01	Failure to properly control the Control Complex Habitability Envelope (door blocked open for maintenance work)	6.7				See URI 95-02-02.	N (D)
VIO 94-27-02	Failure to make two 10 CFR 50.73 reports to the NRC within the required time	6.2			OP-4	See IR 95-02, IR 95-08.	N (I)
VIO 94-27-03	Failure to make one required 10 CFR 50.72 report to the NRC within the required time	6.2			OP-5	See IR 95-08.	N (I)
VIO 96-01-05	Two examples of failure to update FSAR as required by 10 CFR 50.71(e)	6.4					N (S)
VIO 96-02-01	Failure to maintain 0.2 footcandies in the protected area	6.7				See IR 96-07.	N (S)
VIO 96-02-04	Failure to maintain secondary alarm station operable and inadequate compensatory measures	6.2					N (S)
VIO 96-03-11	Failure to follow radiation work permit requirements	6.7					N (S)
VIO 96-03-12	Failure to report the transport of a radioactively contaminated individual offsite	6.2					N (S)
VIO 96-03-13	Unescorted visitor personnel within the protected area	6.7					N (S)
VIO 96-05-04	Licensee approved eddy current acceptance criteria different from TS requirements	6.2					N (S)
VIO 96-06-06	Failure to timely notify the NRC of a condition outside the Appendix R Licensing design basis	6.2					N (S)
VIO 96-07-01	Failure to protect safeguards information	6.7					N (S)

ISSUE	DESCRIPTION	AREA	NRC LEAD	IR/SER	LICENSEE STATUS	COMMENTS	NRC STATUS
VIO 96-07-02	Failure to complete screening elements for Fitness for Duty Personnel	6. 7					N (S)
VIO 96-09-01	Failure to follow a maintenance procedure resulting in the inadvertent initiation of the control room emergency ventilation system	6. 7					N (S)
VIO 96-09-02	Unescorted visitor personnel within the protected area	6. 7					N (S)
VIO 96-11-01	Inadequate work instructions to prevent the inadvertent start of the A EDG	6. 7					N (S)
VIO 96-11-03	Personnel performing work on the reactor building sump without logging onto a clearance, as required by approved WR	6. 7					N (S)
VIO 96-15-01	Failure to perform a required TS surveillance for the remote shutdown panel	6. 2					N (S)
IFI 94-18-09	Review periodic verification plans - MOV (GL 89-10 item)	2				See IR 95-11, IR 95-21: See GL 89-10	N (I)
IFI 95-02-05	Resonance noise in vicinity of MUV-25	7					N (S)
IFI 95-08-03	Emergency Operating Procedure update program	3				See IR 95-16, VIO 93-16-07	N (S)
IFI 95-11-01	SCBA requirements for personnel during a toxic gas release	2					N (S)
IFI 95-21-02	Modification to the standby feedwater pump recirculation line	1					N (S)
IFI 96-03-16	Review of MAR 96-02-09-01, HPI flow indicators, installation package and functional testing results	1					N (S)
IFI 96-04-03	Effect of setpoint calculations on EOP revisions	1				See VIO 93-16-07	N (D)
IFI 96-05-06	Large break loss of coolant analysis generic concerns	1					N (S)
IFI 96-05-09	Deficiencies in Macatiss fire barrier program procedures and documentation	4		IR 96-15			N (S), C
IFI 96-08-02	Reactor building cavity cooling piping thermal relief protection	1				See D.I. B, GL 96-06	N (D)
IFI 96-15-03	Actions taken to resolve post-accident recriticality concerns due to localized boron dilution	1				NRR reviewing, generic B&W issue	N (G)
MULTI-PLANT ACTIONS							
MPA #B105: GL 87-02	Seismic qualification of equipment. Licensee's criteria and procedures approved. Some issues are pending and would be resolved thru audit (scheduled for Mar 97). Licensee's field walkdown results are currently in staff review.	2				Expected completion December.	N (S)
MPA #B111 (IPE): HPA#B118 (IPEEE)	IPE and IPEEE - These are in staff review. Not a restart item.	2					N (S)
MPA #X602: NRCB 96-02	Movement of heavy loads over spent fuel pool - Licensee response in staff review. This would not be a restart issue.	2					N (S)

ISSUE	DESCRIPTION	AREA	NRC LEAD	IR/SER	LICENSEE STATUS	COMMENTS	NRC STATUS
MPA #L208; GL 92-08; BU 92-01	Thermolag - Licensee plans to use Mecatiss (an alternate material), some reanalysis of APPENDIX R, and some exemption. Fire barrier tests of Mecatiss including Ampacity tests are in staff review. This also may not be restart issue.	2				See IR 96-01; IR 96-06	N (S)
MPA# L201; GL 92-01 Rev 1, Supp 1	Reactor vessel structural integrity. RAI to licensee on 7/22/96. Only a data base issue, not a restart item.	2					N (S)
MPA #L604; GL 96-04	Boraflex degradation. Licensee response is just in. Staff review to commence. This may have to be addressed prior to restart because of sensitivity to spent fuel pool issues.	2					N (S)
MPA GL 89-10	MOV testing & surveillance. This item is closed with the exception of IFI 94-18-09 on periodic verification, which is to be followed up after a new generic communication is issued.	2				See IFI 94-18-09	N (I)
LICENSE AMENDMENT/RELIEF REQUESTS							
R.G. 1.97 Instruments	RG 1.97 instrumentation - Subcool monitors etc - category change. License amendment may be approved by December.	2					N (S)
Biometrics & Security	Biometric exemption to allow taking security badges offsite - Staff review is expected to be complete soon.	2					N (S)
Core Flood Nozzle	Relief request RE: Core flood nozzle - Staff needs more info. PM will keep RII informed.	2					N (S)
OTSG Tubes	OTSG tube testing - Licensee proposed a revised OTSG tube acceptance criteria.	2				See VIO 96-05-04	N (S)
OTHER ISSUES							
Pressurizer Nozzle Flaw	During Refuel 9 a sub-surface flaw was discovered. The licensee performed better inspection during R10 and found the flaw to be acceptable. The new inspection results in reduced flaw size and consequently acceptance criteria (which is based on ratio of flaw to thickness) changes. Staff review in progress.	2					N (S)
Criticality Monitor	The licensee did not carry a previously approved exemption from part 70 (70.24?) requirements to Part 50 license. Need legal interpretation of the status of the exemption.	2					N (S)

Sources for issues include: IFS, SIMS, NUREG 1435 (Status of Safety Issues at Licensed Power Plants), Resident's OIL, PM's OIL

NOTE: Open allegations, OI investigations, and emerging/draft issues are listed separately.

LIST OF ACRONYMS USED

AP Abnormal Operating Procedure
 BWST Borated Water Storage Tank

C	Closed
CCHE	Control Complex Habitability Envelope
CFR	Code of Federal Regulations
CR3 D.I.	Crystal River 3 Design Item
CREVS	Control Room Emergency Ventilation System
EA	NRC Escalated Enforcement Action
EDBD	Engineering Design Basis Document
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
EEI	NRC Escalated Enforcement Item
EOP	Emergency Operating Procedure
FSAR	Final Safety Analysis Report
GL	NRC Generic Letter
ILRT	Integrated Leak Rate Test (of the Reactor Building)
IFI	NRC Inspector Followup Item
LER	Licensee Event Report
LOCA	Loss of Coolant Accident
LPI	Low Pressure Injection
LTOP	Low Temperature Overpressure Protection
MPA	NRC Multi-Plant Action
MUV	Makeup Valve
N (D)	Not an NRC Restart Item (because the issue is duplicated by a restart item)
N (G)	Not an NRC Restart Item (because it is a generic issue affecting multiple operating plants and is being addressed by NRR)
N (I)	Not an NRC Restart Item (because previous inspection of the issue is adequate for restart)
N (S)	Not an NRC Restart Item (because resolution of the issue is not needed for safe restart)
NOV	NRC Notice of Violation
NPSH	Net Positive Suction Head
OCR	Operability Condition Report
OP	Operating Procedure
PR	Problem Report
R	NRC Restart Item
RB	Reactor Building
RCS	Reactor Coolant System
RMG	Radiation Monitor
SFP	Spent Fuel Pool
TIA	NRC Task Interface Agreement (between NRC offices)
TS	Technical Specifications
URI	NRC Unresolved Item
USQ	Unreviewed Safety Question
VIO	NRC Violation

CRYSTAL RIVER RESTART ISSUES CHECKLIST

Status as of: 2/19/97

ISSUE	MC 0350 REF APP A	RESP.	REFERENCE	STATUS
ASSESSMENT OF ROOT CAUSE IDENTIFICATION AND CORRECTION				
Conditions requiring shutdown are clearly understood	C.1.1 a.	Panel		C
Root causes of the conditions requiring shutdown clearly understood	C.1.1 b.	Panel		C
Root causes of other significant problems clearly understood	C.1.1 c.	Panel		0
Effectiveness of root cause analysis program	C.1.1 d.	Panel		0
Thoroughness of corrective action plan	C.1.3 a.	Panel		0
Completeness of corrective action plan	C.1.3 b.	Panel		0
Control of corrective action item tracking	C.1.3 c.	Panel		0
Effective corrective actions for the condition requiring shutdown implemented	C.1.3 d.	Panel		0
Effective corrective actions for other significant problems implemented Plan	C.1.3 e.	Panel		0
Control of long-term corrective actions	C.1.3 f.	Panel		
Effectiveness of corrective action verification process	C.1.3 g.	Panel		0
Effectiveness of QA Program	C.1.4 a.	Panel		0
Effectiveness of industry experience review program	C.1.4 b.	Panel		
Effectiveness of Licensee's independent review groups	C.1.4 c.	RII		0
Effectiveness of deficiency reporting system	C.1.4 d.	Panel		0

ISSUE	MC 0350 REF APP A	RESP.	REFERENCE	STATUS
Staff willingness to raise concerns	C.1.4 e.	Panel		0
Effectiveness of commitment tracking program	C.1.4 g.	Panel		0
External Audit (i.e. INPO) capability	C.1.4 h.			
ASSESSMENT OF LICENSEE MANAGEMENT EFFECTIVENESS				
Goals/expectations communicated to staff	C.2.1 a.	RII		
Demonstrated expectation of adherence to procedures	C.2.1 b.	RII		
Management involvement in self-assessment and independent self-assessment capability	C.2.1 c.	RII & NRR		0
Effectiveness of management review committees	C.2.1 d.	RII		0
Management's demonstrated awareness of day-to-day operational concerns	C.2.1 e.	RII		0
Management's ability to identify and prioritize significant issues	C.2.1 f.	RII & NRR		0
Management's ability to coordinate resolution of significant issues	C.2.1 g.	RII & NRR		0
Management's ability to implement effective corrective actions	C.2.1 h.	RII		0
Impact of any Management reorganization	C.2.2 a.	RII & NRR		0
Effectiveness and timely resolution of employee concerns	C.2.2 b.	RII	IR 96-05 IR 96-09	C
Adequate engineering support as demonstrated by timely resolution of issues	C.2.2 c.	Panel		

ISSUE	MC 0350 REF APP A	RESP.	REFERENCE	STATUS
Adequate plant administrative procedures - Engineering/Licensing	C.2.2 d.	RII		0
Effective information exchange with other utilities	C.2.2 e.	RII		0
ASSESSMENT OF PLANT AND CORPORATE STAFF EFFECTIVENESS				
Demonstrated commitment to achieving improved performance	C.3.1 a.	RII & NRR		
Demonstrated safety consciousness	C.3.1 b.	Panel		
Understanding of management's expectations and goals	C.3.1 c.	Panel		
Understanding of plant issues and corrective actions	C.3.1 d.	Panel		
Qualifications and training of staff	C.3.1 e.	RII		
Attentiveness to duty	C.3.1 g.	RII		
Level of attention to detail	C.3.1 h.	RII & NRR		
Staff overtime usage	C.3.1 j.	RII		
Procedure usage/adherence	C.3.1 k.	RII		
Awareness of plant security	C.3.1 l.	RII		
Licensed operator staffing meets requirements and licensee goals	C.3.3 a.	RII		
Level of formality in control room	C.3.3 b.	RII		
Effectiveness of control room simulator training	C.3.3 c.	RII		
Control room/plant operator awareness of equipment status	C.3.3 d.	RII		
Adequacy of plant operating procedures	C.3.3 e.	RII		
Procedure usage/adherence	C.3.3 f.	RII		
Log keeping practices	C.3.3 g.	RII		

ISSUE	MC 0350 REF APP A	RESP.	REFERENCE	STATUS
ASSESSMENT OF PHYSICAL READINESS OF PLANT				
Operability of technical specification systems	C.4 a.	RII		
Operability of required secondary and support systems	C.4 b.	RII		
Results of pre-startup testing	C.4 c.	RII		
Adequacy of system lineups	C.4 d.	RII		
Adequacy of Surveillance tests/test program	C.4 e.	RII		
Significant hardware issues resolved (i.e. damaged equipment, equipment ageing, modifications)	C.4 f.	RII		
Effectiveness of the plant maintenance program	C.4 h.	RII		
Maintenance backlog managed and impact on operation assessed	C.4 i.	RII		
Adequacy of plant housekeeping and equipment storage	C.4 j.	RII		
ASSESSMENT OF COMPLIANCE WITH REGULATORY REQUIREMENTS				
Applicable license amendments have been issued	C.5 a.	NRR		
Applicable exemptions have been granted	C.5 b.	NRR		
Applicable reliefs have been granted	C.5 c.	NRR		
Significant enforcement issues have been resolved	C.5 f.	RII & NRR		
Allegations have been appropriately addressed	C.5 g.	RII		
10 CFR 2.206 petitions have been appropriately addressed	C.5 h	NRR		NA FEB 19 '97
COORDINATION WITH INTERESTED AGENCIES AND PARTIES				

ISSUE	MC 0350 REF APP A	RESP.	REFERENCE	STATUS
Federal emergency Management Agency	C.6 a.	RII & NRR		
Appropriate State and local officials	C.6 e.	RII		
Appropriate public interest groups	C.6 f.	RII & NRR		
Local news media	C.6 g.	RII		

Status as of: 2/12/97

CRYSTAL RIVER RESTART TASK CHECKLIST

TASK	MC 0350 REF APP A	RESP.	REFERENCE	STATUS
Issue preliminary notification	B.2 b.	RII		C
Congressional Notification	B.2 g.			
Establish Restart Panel	B.3 a.	RII, NRR	11/1/96 SDE ltr	C
Assess available information	B.3 b.	Panel		0
Develop Case Specific Checklist	B.3 f.	RII, NRR	11/13/96	C
Develop Restart Action Plan	B.3 g.	RII, NRR		0
Regional Administrator Approves Restart Action Plan	B.3 h.	RII		
NRR Associate Director Approves Restart Action Plan	B.3 i.	NRR		
Implement Restart Action Plan	B.3 j.	RII		
Evaluate findings of IPAP Inspection	B.4.1 a.	PANEL	2/12/97	C
Licensee performs root cause analysis and develops corrective action plan	B.4.1 b.	Licensee		0
NRC evaluates licensee's root cause determination and corrective action plan	B.4.1 c.	Panel		0
Review licensee generated restart issues	B.4.3 a.	Panel		0
Independent NRC identification of restart items (consider external sources)	B.4.3 b.	Panel		0
NRC/Licensee agreement on restart issues	B.4.3 c.	Panel		
Evaluate Licensee's restart issues implementation process	B.4.3 d.	RII		
Evaluate Licensee's implementation of verification process	B.4.3 e.	RII		0
Evaluate Licensee's restart readiness self-assessment	B.4.5 a.	RII		

TASK	MC 0350 REF APP A	RESP.	REFERENCE	STATUS
NRC evaluation of applicable items from ISSUES section below complete	B.4.5 b.	Panel		
Restart issues closed	B.4.5 c.	Panel		
Conduct NRC restart readiness team inspection	B.4.5 d.	RII		
Issue augmented restart coverage inspection plan	B.4.5 e.	RII		
Comments from other parties considered	B.4.5 f.	Panel		
Re-review of Generic Restart Checklist complete	B.4.5 h.	NRR		
Prepare restart authorization document and basis for restart	B.5 a.	RII & NRR		
NRC Restart Panel approves Restart Authorization	B.5 b.	PANEL		
No restart objections from other applicable HQ offices	B.5 c	NRR, RII PANEL		
No restart objections from applicable Federal Agencies	B.5 d	RII & NRR		
Regional Administrator concurs in Restart Authorization	B.5 e.	RII		
NRR Associate Director concurs in Restart Authorization	B.5 f.	NRR		
EDO concurs in Restart Authorization when required	B.5 g.	NRR		
Conduct ACRS briefing when requested	B.5 h.	NRR		
Conduct Commission briefing when requested	B.5 i.	RII & NRR		
Commission concurs in Restart Authorization when required	B.5 j.			
Regional Administrator authorizes restart	B.5 k.	RII		

TASK	MC 0350 REF APP A	RESP.	REFERENCE	STATUS
Notify Commission of restart authorization (if Commission did not concur in Restart Authorization)	B.6 a.	NRR		
Notify EDO of restart authorization (if EDO did not concur in Restart Authorization)	B.6 b.	NRR		
Notify Congressional Affairs of restart authorization	B.6 c.	NRR		
Notify ACRS of restart authorization (a briefing may be substituted)	B.6 d.	NRR		
Notify Applicable Federal agencies of restart authorization	B.6 e.			
Notify Public Affairs of restart authorization	B.6 f.	RII		
Notify State and Local officials of restart authorization	B.6 g.	RII		
Notify citizens or groups that expressed interest during the restart approval process	B.6 h.	RII		