

August 31, 2000

MEMORANDUM TO: File

FROM: N. Kalyanam, Project Manager /RA/
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

SUBJECT: WATERFORD STEAM ELECTRIC STATION, UNIT 3 RE: RESPONSE
TO REQUEST FOR ADDITIONAL INFORMATION (TAC No. MA7999)

The purpose of this memorandum is to place into ADAMS, the e-mails received from the licensee on February 24, 2000, and June 19, 2000, providing their response to the staff's questions related to technical specification change request NPF-38-226 regarding the containment building penetrations during core alterations and irradiated fuel movement in containment. The two e-mails were in response to the staff's questions in a telephone call to the licensee on February 22, 2000, regarding the containment closure process, and an electronic mail to the licensee dated June 12, 2000, which is contained in the June 19 licensee response.

Docket No. 50-382

Attachment:
E-mail dated February 24, 2000, and
June 19, 2000

DISTRIBUTION:

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NrrRidsDlpmLpdiv1 (RGramm)
NrrRidsPMNKalyanam
NrrRidsLADJohnson

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DATE	8/30/00	8/30/00	8/30/00

OFFICIAL RECORD COPY

From: "WEMETT, ARTHUR E" <AWEMETT@entergy.com>
To: "Kalyanam, Nageswaran" <nxx@nrc.gov>
Date: Thu, Feb 24, 2000 2:49 PM
Subject: Containment Hatch TSCR

Kaly

Attached are two files. The one labeled CntClos 01.doc is entries from the 'Precautions and Limitations' section and body of the procedure (OP-001-003, RCS Draindown). The one labeled CntClos 02.doc contains the attachment which has the forms, instructions, and requirements for Containment Closure Requests and approvals.

If there are any questions, please call.

Reminder tomorrow is an off day for us.

Received your fax concerning the BASES CONTROL PROGRAM.

Gene

<<CntClos 01.doc>> <<CntClos 02.doc>>

- 3.2.2 The following limitations apply any time the RCS level is < 18' MSL, while fuel is in the Reactor Vessel:

NOTE

10CFR50.59, Safety Evaluation, may require shorter Containment Closure time or a higher RCS level be maintained.

- 3.2.2.1 Equipment Hatch shall not be opened < 3 days after Reactor Shutdown without the following:
- 10CFR50.59, Safety Evaluation completed
- and
- Logged on Attachment 11.13, Containment Closure Impairment Log
- and
- Maintenance personnel stationed at the Equipment Hatch to close and secure hatch with a minimum of four symmetric bolts, in ≤ 1 hour.
- 3.2.2.2 At least one CET available from Channel 1 QSPDS and at least one CET available from Channel 2 QSPDS.
- 3.2.2.3 Reactor Vessel Head is in place (head bolts not required).
- 3.2.2.4 LPSI Pump vent rigs shall be installed at the following locations:
- SI-112A(B), LPSI Pump A(B) Suction Header Vent
- SI-1142A(B), LPSI Pump A(B) Seal Outlet to Heat Exch Vent
- 3.2.2.5 Maintain at least 1 S/G available for heat removal as follows unless the requirements for Nozzle Dam Installation per Step 3.2.3 of Limitations are met:
- 3.2.2.5.1 S/G level $\geq 70\%$ WR.
- 3.2.5. The following limitations apply to RCS Perturbations:
- 3.2.5.1 RCS Perturbation Log and RCS Perturbation Log Index shall be placed in a binder, maintained by the SS, whenever RCS is in Mode 5 or 6.
- 3.2.5.2 Any activity NOT under direct supervision of Control Room staff that has the potential to affect RCS inventory or heat removal capability shall meet the following requirements:
- Logged on Attachment 11.11, RCS Perturbation Log.
- Evaluated and approved by Shift Supervisor (SS) and Duty Plant Manager (DPM).

- 3.2.5.3 RCS Perturbations include, but are not limited to, the following:
- Installation and removal of Nozzle Dams
 - Freeze seals used as RCS isolations
 - Work on any instrumentation that may affect Shutdown Cooling components
 - CETs (permanent or temporary) which must be disconnected while performing certain refueling operations
 - RCS Drain Down with either RWLIS or RCSLMS unavailable.
- 3.2.6. The following limitations apply to Containment Closure Impairments:
- 3.2.6.1 Containment Closure Impairment Log and Containment Closure Impairment Log Index shall be placed in a binder, maintained by the SS, whenever RCS is in Mode 5 or 6.
- 3.2.6.2 Any activity resulting in a flowpath between inside Containment atmosphere and outside Containment atmosphere, which is NOT provided with an automatic closure on high containment radioactivity, shall meet the following requirements:
- Capable of being isolated within 1 hour.
 - Logged on Attachment 11.13, Containment Closure Impairment Log.
 - Evaluated and approved by SS and DPM.
- 3.2.7. All components associated with systems, which have potential to delay or prevent Containment Closure, shall be danger tagged to ensure Containment Integrity.
- 6.4.3.4 The following RCS level indications must be operable with at least 1 indication on scale.
- RWLIS WR indication
 - RWLIS NR indication CP-36 RC-ILI-0108A2 or CP-2 NR REFLG WTR LVL
 - RCSLMS Sightglass or RLIS
 - RCSLMS NR indication CP-8 RC-ILI-0107-2 or CP-2 RC-ILI-0107-1
- 6.4.3.4.1 With any of the above level indications not operable the following must be met:
- RCS perturbation log filled out.
 - At least 2 RCS level instruments available with 1 on scale.
 - Duty Plant Manager Approval.
- 6.4.3.5 If nozzle dam(s) are installed, then verify nozzle dam configurations are in accordance with Attachment 11.15, Nozzle Dam Configuration Restrictions.
- 6.4.3.6 Licensed operator, RO or SRO, is dedicated to monitor drain down process and shutdown cooling conditions.
- 6.4.3.7 Two High Pressure Safety Injection (HPSI) Pumps, with their respective Control Switches placed in the OFF position, are available for RCS Inventory Makeup.
- 6.4.3.8 SS should identify any ongoing work, which could adversely affect the RCS level or Shutdown

Cooling on Attachment 11.11, RCS Perturbation Log.

- 6.4.3.9 SS should identify all containment penetration work ongoing, including the use of temporary penetrations for electrical and air lines and log on Attachment 11.13, Containment Closure Impairment Log.

1. GENERAL INSTRUCTIONS

- 1.1 Containment Closure Impairment: Any activity resulting in a flowpath between inside Containment atmosphere and outside Containment atmosphere which is NOT provided with an automatic closure on high Containment radioactivity.
- 1.2 All Containment Closure Impairments shall be capable of being isolated within 1 hour.
- 1.3 Containment Closure Impairments include, but are not limited to, the following:
 - LLRT tests in which vent and drain paths are established across containment penetrations
 - Freeze seals used as Containment Isolations
 - Installation and Removal of temporary electrical and piping Containment Penetrations
 - Maintenance required on components or systems which have potential to delay or prevent prompt Containment Closure.
- 1.4 Containment Closure Impairments do NOT include the following:
 - Work on Components which are isolated and Danger Tagged
 - Normal Operation of Containment Purge System
- 1.5 Containment Closure Impairment Log and Containment Closure Impairment Log Index shall be placed in a binder, maintained by the SS, whenever RCS is in Mode 5 or 6.

NOTE

Containment Isolation Component List is a guideline for determining which components provide a Containment Isolation function.

1.6 Containment Isolation Components are listed as follows:

<u>PEN #</u>	<u>OUTSIDE</u>	<u>INSIDE</u>
49	ARM-103 ARM-110	ARM-1031 ARM-104 ARM-109
5	BD-103A	BD-102A
6	BD-103B	BD-102B
43	BM-110	BM-109
10	CAP-102 CAP-1021 CAP-103 CAP-1032	CAP-104
11	CAP-2032 CAP-204 CAP-2041 CAP-205	CAP-203
46	CAR-101A	CAR-1011A CAR-102A
45	CAR-101B	CAR-1011B CAR-102B
48	CAR-202A	CAR-201A CAR-2011A
47	CAR-2012B CAR-202B	CAR-200B CAR-201B CAR-2011B
23	CC-641 CC-642 CC-643	CC-644
24	CC-711 CC-712 CC-713	CC-710

PEN #	OUTSIDE	INSIDE
17 & 18	CC-807A CC-809A CC-819A CC-823A	CC-811A CC-813A CC-815A CC-817A
15 & 16	CC-807B CC-809B CC-819B CC-821 CC-823B	CC-811B CC-813B CC-815B CC-817B
19 & 20	CC-808A CC-810A CC-820A CC-822A	CC-812A CC-814A CC-816A CC-818A
21 & 22	CC-808B CC-810B CC-820B CC-822B	CC-812B CC-814B CC-816B CC-818B
71	CMU-244	CMU-245
34	CS-125A CS-127A CS-ILI7123A	CS-128A CS129A
35	CS-125B CS-127B CS-ILI7123B	CS-128B CS-129B
26	CVC-109	CVC-103 CVC-104 CVC-105 CVC-106 CVC-107 CVC-108
27	CVC-209	CVC-2091 CVC-210 CVC-212 CVC-215 CVC-216A CVC-216B CVC-218A CVC-218B CVC-219
44	CVC-401	RC-606
12	CVR-101	CVR-1011 CVR-102

PEN #	OUTSIDE	INSIDE
13	CVR-201	CVR-2011 CVR-202
53	CVR-IDPS5220A CVR-IDPS5221A CVR-IDPT5017A CVR-IDPT5017C	
65	CVR-IDPS5220B CVR-IDPS5221B CVR-IDPT5017B LRT-202 LRT-204	
1 & 3	EFW-228A EFW-229A FW-184A MS-1051A MS-106A MS-108A MS-109A MS-110A MS-112A MS-113A MS-114A MS-116A MS-119A MS-120A MS-124A MS-1244A MS-401A MS-ILIS0312A MS-IPT0301A NG-412A SSL-301A	FW-185A FW-1861A FW-188A MS-101A MS-IFT0300A MS-IFT1011 SG-ILT1105 SG-ILT1113A SG-ILT1113B SG-ILT1113C SG-ILT1113D SG-ILT1115A SG-ILT1115B SG-ILT1111 SG-IPT1013A SG-IPT1013B SG-IPT1013C SG-IPT1013D SG-IPT1115A SG Manways SG BD Line SSL-8001A SSL-8002A

PEN #	OUTSIDE	INSIDE
2 & 4	EFW-228B EFW-229B FW-184B MS-106B MS-108B MS-109B MS-110B MS-112B MS-113B MS-114B MS-116B MS-119B MS-1191B MS-120B MS-124B MS-1244B MS-401B MS-ILIS0312B MS-IPT0301B NG-412B SSL-412B SSL-301B SSL-8001B	FW-185B FW-1861B FW-188B MS-101B MS-1051B MS-IFT0300B MS-IFT1021 MS-ILT1106 MS-ILT1123A MS-ILT1123B MS-ILT1123C MS-ILT1123D MS-ILT1121 MS-ILT1125A MS-ILT1125B MS-IPT1023A MS-IPT1023B MS-IPT1023C MS-IPT1023D SG-IPT1125B SG-IPT1125B SG Manways SSL-8002B
25	FHS-201	Blind Flange
60	FP-601A	FP-602A
61	FP-601B	FP-602B
51	FS-405	FS-406
62	FS-416	FS-415
54	ESF-IPT6755A ESF-IPT6755B	Diaphragm Seal
31	GWM-105	GWM-104
66	HRA-110A HRA-126A HRA-128A	HRA-109A HRA-127A
67	HRA-110B HRA-126B HRA-128B	HRA-109B HRA-127B
9	IA-909	A-9091 A-910
63	LRT-109 LRT-110	Test Flange

14	NG-157 NG-158	NG-1571
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PEN #	OUTSIDE	INSIDE
7	PMU-151	PMU-152
28	PSL-106 PSL-107	PSL-105
29	PSL-204	PSL-203
30	PSL-304	PSL-303
8	SA-908 SA-909	SA-9081
39	SI-138A SI-140A SI-1421A	SI-1401A SI-142A
37	SI-138B SI-140B	SI-1401B SI-142B SI-1421B
38	SI-139A SI-141A	SI-1411A SI-143A
36	SI-139BA SI-141B	SI-1411B SI-143B
55	SI-225A SI-225B SI-229A SI-229B SI-IFI0311	SI-2351 SI-241 SI-2411
56	SI-226A SI-226B SI-230A SI-230B SI-IFI0321	SI-2361 SI-242 SI-2421
57	SI-227A SI-227B SI-231A SI-231B SI-IFI0331	SI-2391 SI-243 SI-2431
58	SI-228A SI-228B SI-232A SI-232B SI-IFI0341	SI-2401 SI-2421 SI-2441
59	SI-344	SI-343
41	SI-407A SI-4051A SI-406A	SI-405A

PEN #	OUTSIDE	INSIDE
40	SI-407B SI-4051B SI-406B	SI-405B
69	SI-506A SI-507A SI-IFT0390A	SI-510A SI-5101A SI-5102A
70	SI-506B SI-507B SI-IFT0390B	SI-510B SI-5101B SI-5102B
32	SI-602A	
33	SI-602B	
42	SP-106	SP-105
52	SSL-8005 SSL-8006A	SSL-8004A
68	SSL-8006B	SSL-8004B
*Personnel Airlock	Outer Door	Inner Door
*Escape Airlock	Outer Door	Inner Door
*Equipment Hatch		
*Fire Impairment may be Required.		

2. SPECIFIC INSTRUCTIONS

2.1 Block 1: Date

Enter present date

2.2 Block 2: Impairment Number

2.2.1 The Impairment Number is the last two digits of current year followed by a hyphen and the next sequential Containment Closure Impairment Number (example: 91-001 and 91-002).

2.2.2 Enter next sequential number on Attachment 11.12, Containment Closure Impairment Log Index, and enter same number on Block 2 of this Attachment.

2.3 Block 3: Planned Activity

Enter the following:

MAI number

Procedure number and title

Affected component number and name

Penetration number

Brief description of activity

2.4 Block 4: Responsible Group

Enter the following:

Responsible Group

Lead Worker or designee and extension number. If activity is planned for greater than one shift, then enter names and extension numbers of Lead Workers or designees for each shift. If extension number(s) are not available, then enter NA.

2.5 Block 5: Additional Monitoring Requirements

1.5.1 Responsible Group will supply any extra personnel necessary for Additional Monitoring Requirements.

- 2.5.2 SS will evaluate the following:
 Impact of Planned Activity on Containment Closure.
 Additional measures necessary to ensure prompt Containment Closure.
 Technical Specifications, procedural, fire impairment, and MAI requirements.
- 2.5.3 SS may implement any of the following:
 Increased frequency of logging a parameter.
 Increased frequency of inspecting a component or system.
 Stationing personnel to stand by for restoration purposes.
 Any other requirement he may deem necessary to mitigate effects of Impairment.
- 2.6 Block 6: Preplanned Contingencies
- 2.6.1 Enter estimated time to isolate the Impairment.
- 2.6.2 Mark the box for the person responsible to isolate the Impairment as follows:
If isolation is to be performed from Control Room, then "NPO" may be marked.
If isolation is to be performed by shift watchstanding NAO, then "NAO" may be marked.
If isolation is to be performed by the worker requiring the Impairment, then "Lead Worker" may be marked.
- 2.6.3 Enter the method in which the Impairment is to be isolated (example: Close Letdown Inside Containment Isolation, CVC-103).
- 2.7 Block 7: Approval
 Both SS and DPM approval is required before the activity may begin.
 Enter signature, date, and time.
- 2.8 Block 8: Impairment Cancellation
- 2.8.1 SS enter signature, date, and time when all of the following are met:
 All work completed.
 All Additional Monitoring Requirements are no longer required.

Containment Closure Impairment is restored.

From: "WILLIAMS, RONALD L" <RWILL15@entergy.com>
To: "N. Kaly Kalyanam" <NXK@nrc.gov>
Date: Mon, Jun 19, 2000 3:52 PM
Subject: RE: TSCR NPF-38-226, Containment Building Penetrations During Core Alterations and Irradiated Fuel Movement in Containment

Kaly:

In response to your request for additional information concerning NUREG-1449 considerations for rapid equipment hatch closure, items # 4 and 5 below, Entergy is providing the following information. Note, the information being provided is based on existing administrative controls that require rapid equipment hatch closure based on a present containment closure time of one hour (Amendment 148 SER). Commitments contained in the original submittal, letter W3F1-99-0122, dated January 12, 2000 specify that (1) additional action would be taken to have the containment equipment hatch closed within 30 minutes, (2) administrative procedures would be implemented to ensure the equipment hatch and at least one door in each personnel airlock would be closed following a containment evacuation, and (3) open penetrations would also be promptly closed. These commitments will enhance the existing administrative controls for rapid equipment hatch closure.

Consideration #4 - Nearness of Required Tools

The Waterford 3 containment equipment hatch door design is such that it can be closed easily and efficiently. In accordance with Administrative Procedure PLG-009-016, "Containment Building Administrative Controls During Refueling Outages," the tools and equipment required to support closure of the equipment hatch are located at the Equipment Hatch location. (step 5.5.2.1.E) The tools consist of closure wrenches used to tighten the four swing bolts to secure the inside equipment hatch. The other equipment required to support the equipment hatch closure are the hatch handling mechanism and the equipment hatch bridge lifting rig attached to the bridge (bridge used for personnel access from outside to inside containment). The handling mechanism consists of 3 chain-operated hoists and a support beam used to remove, store, and reinstall the hatch. The handling mechanism is used to remove the hatch and move it to the storage position. The handling mechanism remains attached to the hatch during the storage period and reinstallation. The bridge is removed prior to reinstalling the hatch. The activities involving the removal of the equipment hatch bridge, the reinstallation of the hatch, and the securing of the hatch using four bolts will be completed within a 30 minute period of time following a request from Operations to close the Containment.

The procedural steps required to close the equipment hatch are contained in maintenance procedure MM-008-001, "(Inside) Maintenance Access Hatch and (Outside) Maintenance Access Hatch Shield Door Opening, Inspection, and Closing."

5. Consideration #5 - Training and Rehearsing of Personnel

Under Entergy's existing administrative controls contained in PLG-009-014, "Conduct of Planned Outages," and PLG-009-016, "Containment Building Administrative Controls during Refueling Outages," training of Waterford 3 personnel is the responsibility of the Containment Director (PLG-009-014, Attachment 7.1, Shutdown Risk Reduction Guidelines). The Containment Director is responsible for providing direction and control for activities performed in the Containment, outside of fuel movement and reactor vessel disassembly/assembly, during planned outages. He has Containment Coordinators working for him to implement the overall working level coordination and control of these containment activities.

The Containment Coordinators are trained on containment closure responsibilities (containment evacuation and hatch closure procedures). A Containment Coordinator, responsible for coordinating containment evacuation and closure, is always designated by the Containment Coordination Supervisor as the Operations Department contact in containment if a containment closure request is made. Containment evacuation and closure would be requested by Operations in the event of a potential loss of decay heat removal. Note, present TS require containment integrity (prohibit Equipment hatch, airlocks, and other penetrations from being open) during fuel movement or core alterations. The designated Containment Coordinator is also responsible for completing other containment closure activities, such as closing the airlocks and all other penetrations, ensuring all work activities are stopped and placed in a safe condition, and ensuring that all personnel are evacuating containment in a orderly but expeditious manner.

The Containment Director is further responsible for training containment closure personnel and maintaining a roster of qualified personnel. These personnel, permanent plant employees or contract personnel, are trained and tested on fast closure of the equipment hatch. In addition, a standard outage activity (RCB00006) is placed in the outage schedule to ensure training of all containment personnel responsible for equipment hatch closure is accomplished.

As stated above, the existing administrative controls for rapid equipment hatch closure are based on the present complete containment closure time of one hour (Amendment 148 SER). As stated in the original submittal, Waterford 3 has closed the equipment hatch in less than 15 minutes dating as far back as September 29, 1989, when Entergy performed an equipment hatch closure test at Waterford 3 to verify the time required to close the equipment hatch. This test simulated conditions normally found during an outage as part of the initiatives to address Generic Letter 88-17. The existing administrative controls require appropriate training in containment closure procedures to ensure the personnel responsible for containment closure can perform this requirement within the existing one hour time period.

**Note, the administrative procedure PLG-009-016 will be deleted prior to Refueling Outage 10, but the applicable administrative controls contained within that are associated with ensuring rapid containment closure will be

transferred to another administrative procedure.

If you have any questions, please contact me.

Ron Williams
Waterford 3
Licensing

-----Original Message-----

From: N. Kaly Kalyanam [mailto:NXK@nrc.gov]

Sent: Monday, June 12, 2000 1:30 PM

To: rwill15@entergy.com

Subject: TSCR NPF-3226

This is regarding your TS amendment request on "Containment Building Penetrations during core alterations and Irradiated fuel movement in Containment"

Paragraph 6.9.2 of NUREG-1449 identifies the considerations involved in rapid equipment hatch closure. They are:

1. Radiological and environmental conditions in containment resulting from coolant boiling,
2. Number and location of hatch closure bolts,
3. Need for and availability of compressed air and electrical power,
4. Nearness of required tools, and
5. Training and rehearsing of personnel.

While your application has discussed the first 3 considerations, I can not see the last two discussed. I am sure you have them addressed in some other Document/ Procedure/ Manual. Can you have these details either emailed or faxed to me as soon as you can?

Thanks

Kaly

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CC: "PERKINS, EVERETT P" <EPERKI1@entergy.com>, "BRAND...