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Director, Nuclear Safety Assurance
Waterford 3

W3F1-2004-0029

April 15, 2004

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

SUBJECT: Supplement to Amendment Request NPF-38-249,
Extended Power Uprate
Waterford Steam Electric Station, Unit 3
Docket No. 50-382
License No. NPF-38

REFERENCES:
1. Entergy Letter dated November 13, 2003, "License Amendment Request NPF-38-249 Extended Power Uprate"
2. NRC Letter dated March 16, 2004, "Waterford Steam Electric Station, Unit 3 (Waterford 3) – Request for Additional Information Related to Revision to Facility Operating License and Technical Specifications - Extended Power Uprate (TAC No. MC1355)"

Dear Sir or Madam:

By letter (Reference 1), Entergy Operations, Inc. (Entergy) proposed a change to the Waterford Steam Electric Station, Unit 3 (Waterford 3) Operating License and Technical Specifications to increase the unit's rated thermal power level from 3441 megawatts thermal (MWt) to 3716 MWt.

By letter (Reference 2), the Nuclear Regulatory Commission (NRC) staff requested additional information (RAI) related to three review areas. The review areas and number of questions are Human Performance (1), Electrical (1), and Environmental Assessment (7). Entergy's response to these nine questions is contained in the attachment to this letter.

There are no technical changes proposed. The original no significant hazards consideration included in Reference 1 is not affected by any information contained in this letter. There are no new commitments contained in this letter.

If you have any questions or require additional information, please contact D. Bryan Miller at 504-739-6692.

A001

I declare under penalty of perjury that the foregoing is true and correct. Executed on April 15, 2004.

Sincerely,

Brad Houston 4/15/04

Brad Houston
Acting, NSA Director

BLH/DBM/cbh

Attachment: Response to Request for Additional Information

cc: Dr. Bruce S. Mallett
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Attachment To

W3F1-2004-0029

Response to Request for Additional Information

**Response to Request for Additional Information
Related to the Extended Power Uprate**

Human Performance

Question 1:

With regard to operator actions, the submittal indicates that the extended power uprate (EPU) has the general effect of reducing the time available for the operators to complete recovery actions. Table 2.11-1 in the submittal provides a comprehensive list of post-initiator operator actions that would have changed available times as result of the power uprate, including several events with significant decreases in time available. Specifically, for events EHFALPABSP and HHFALNABSP, the existing time available is 60 minutes, and the EPU time available would be decreased to 14 minutes. Additionally, for the events EHPALPABMP and HHFALNABMP, the existing time available is 40 minutes, and the EPU time available would be limited to only 2.83 minutes, with a note explaining that "the 2.83 minutes time limit does not include the effect of the safety injection tanks, which would extend this time.' Please provide the basis (e.g., demonstration) for determining that all operating crews will be able to successfully accomplish the required tasks in the reduced times available. In the response, please also include a description of the times required to complete the necessary actions. Additionally, please explain what is meant by the note to events EHFALPABMP and HHFALNABMP regarding the effect of the safety injection tanks on time available, including the length of the time extension, and again provide a basis (e.g., demonstration) for determining that all operating crews will be able to successfully accomplish the required tasks in the times available.

Response 1:

These events have to do with credit in the probabilistic safety analysis (PSA) for the operators changing the alignment of the 3AB-S 4KV electrical bus or manually aligning and starting the spare (3rd) high pressure safety injection (HPSI) pump. These actions are not required in the design basis or the accident analysis presented in the Final Safety Analysis Report (FSAR). Although it appears from Table 2.11-1 that the times available for these actions would decrease significantly with power uprate, this is not the case. The pre-power uprate times available (60 and 40 minutes for small and medium loss of coolant accident (LOCA), respectively) were assumptions, not based on thermal-hydraulic analyses. The post-power uprate times (14 and 2.83 minutes) are from realistic, plant-specific thermal-hydraulic analyses performed in support of the power uprate risk assessment. The pre- and post-uprate times for these events are not at all comparable. Table 2.11-2 shows the estimated decrease in time available for three operator actions for which pre- and post-uprate times were estimated using the same plant-specific thermal-hydraulic analysis method; these time changes are more representative of the possible effects of power uprate.

With regard to the request to "provide the basis (e.g., demonstration) for determining that all operating crews will be able to successfully accomplish the required tasks in the reduced times available", the actions represented by these events are NOT required in the design basis FSAR analyses. Because the available times for the power uprate condition are so short, the risk assessment assumes that the actions are FAILED. It was assumed that there was not

enough time available to successfully accomplish the tasks and thus the failure probabilities for these actions were set to 1.0.

The footnote is simply saying that 2.83 minutes for medium LOCAs is a conservatively short time, since in reality the safety injection tanks would extend the time to core uncovery farther than was calculated by neglecting them. It has no effect on the risk assessment because no credit is taken for the actions in the probabilistic risk assessment model.

Electrical

Question 2:

Address the compensatory measures that the licensee would take to compensate for the depletion of the nuclear unit megavolt-amperes resistive capability on a grid-wide basis.

Response 2:

Note: Based on conversations with the NRC staff, the following response addresses nuclear unit megavolt-amperes reactive capability on a grid-wide basis.

No compensatory measures are postulated post uprate.

The present generator design is for a 1333.2 MVA (see attached generator capability curve) rating with the main transformers rated for 1200 MVA (FSAR Section 8.2.1 & Table 8.2-1). The generator is being rewound to restore the original design (i.e., 1333.2 MVA) which can accommodate EPU conditions. The main transformers and switching station are being modified as necessary to support the full 1333.2 MVA generator post uprate conditions as discussed in power uprate report (PUR) Section 2.3.2.2.

The pre-uprate nominal generator gross output is 1153 MW. The generator reactive output existing Administrative Limit is 400 MVAR which results in a power factor of 0.954.

The EPU electrical increase is targeted at 68 MW. The system interconnection and offsite studies assumed a conservative output of 1249 MW for the post-uprate generator gross output. The generator nominal reactive output capability for this output would be 466 MVAR or a power factor of 0.937. The analyses assumed a conservative value of 400 MVAR during the evaluation.

As described in PUR Section 2.3.2 grid stability studies have demonstrated that for power uprate the transmission grid remains stable. These studies evaluated the increased grid injection from Waterford 3 to ensure system stability criteria is met and to ensure that the off-site voltage remains above 0.97 PU under various transmission contingencies while Waterford 3 is off-line (post trip voltages).

In addition to the above unit specific studies, the Transmission's Technical System Planning group perform system studies on a regular basis to ensure compliance with North American Electric Reliability Council's (NERC) planning criteria. These studies (as necessary) assumed

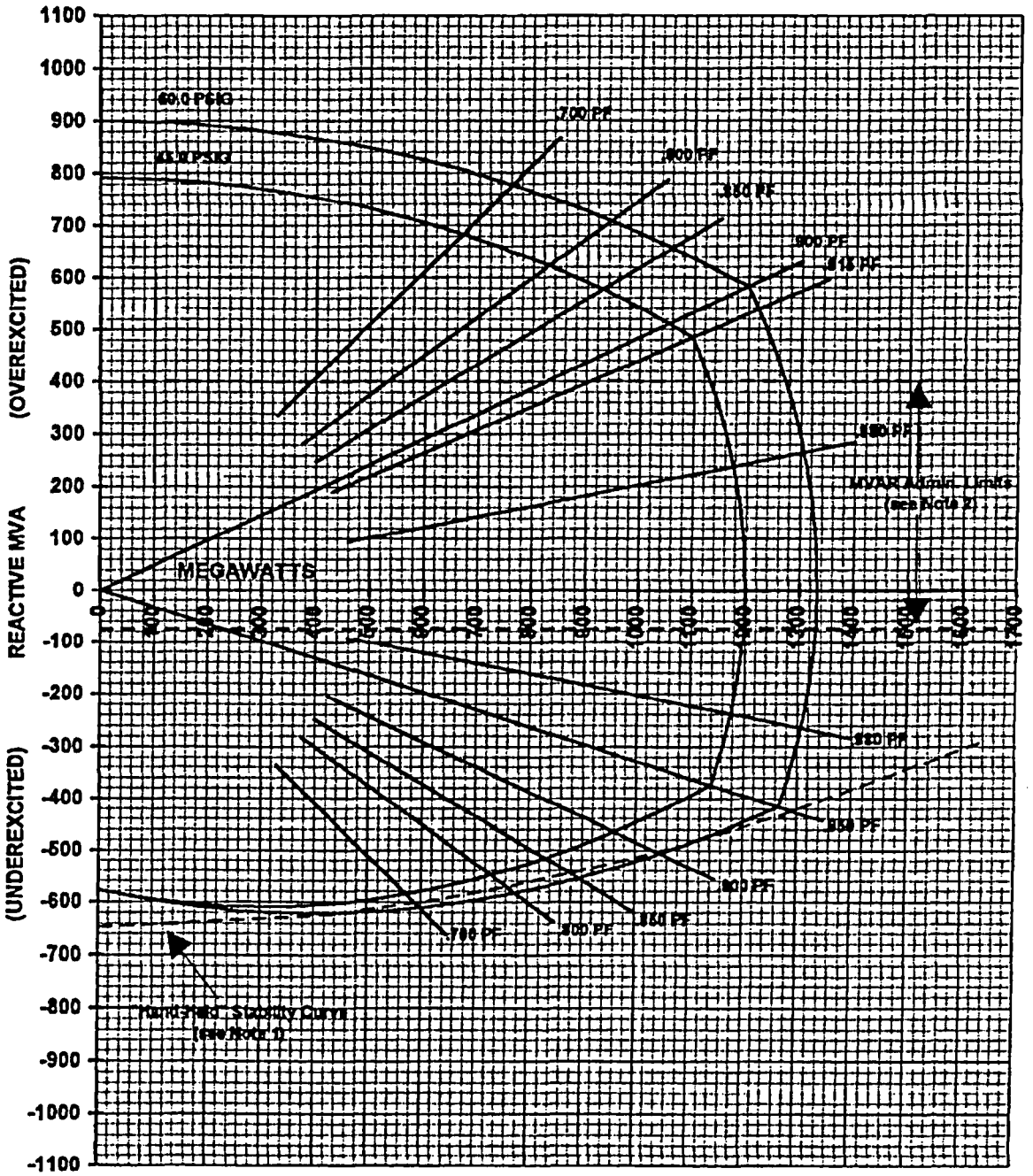
an overexcited reactive capability of 400 MVAR (to match administrative limit) from the Waterford 3 generator.

The Waterford 3 unit is located in an area containing a large amount of generation. Therefore, any adverse impact on the transmission system is not postulated due to the administrative limit imposed on the Waterford 3 generator.

WESTINGHOUSE ELECTRIC CORPORATION

CALCULATED CAPABILITY CURVES

Waterford Unit #3 SES - Curve No. 660485



HYDROGEN INNER-COOLED TURBINE GENERATOR
1333.200 MVA .900 PF 25.0 KV 30789 AMPERES
3 PHASE 60 HERTZ 1800 RPM .50 SCR 60 PSIG

WESTINGHOUSE ELECTRIC CORPORATION
CALCULATED CAPABILITY CURVES
Waterford Unit #3 SES - Curve No. 660485

Note 1 The "hand-held" stability curve should be the most limiting guideline to be used when the automatic voltage regulator is out of service AND the generator is operated in the under-excited region (ref. W3P85-2493). Please note that the desired operation of the generator when the automatic voltage regulator is out of service is in the OVEREXCITED region (ref. OP-010-001, Att. 8.23). Also note that the "hand-held" stability curve is based on conditions external to the generator. The capability of the generator is bounded by the unit's capability curve.

Note 2 These MVAR limits (400 MVAR overexcited and 75 MVAR underexcited) are administrative only, and are based on conditions external to the generator (ref. memo from T.P. Brennan to R.S. Starkey dated 10-08-92, "Main Generator Leading MVARs"). The capability of the generator is bounded by the unit's capability curve.

HYDROGEN INNER-COOLED TURBINE GENERATOR
1333.200 MVA .900 PF 25.0 KV 30789 AMPERES
3 PHASE 60 HERTZ 1800 RPM .50 SCR 60 PSIG

Environmental Assessment

Question 3:

Provide the analysis that supports the conclusion made in Section 5.1 that the EPU does not require any change to the State requirements under the Clean Water Act. Also, describe any changes in chemical usage resulting from the proposed EPU and the effects this will have on the discharge through the National Pollutant Discharge Elimination System-permitted outfalls to the Mississippi River.

Response 3:

Changes to Waterford 3 Louisiana Pollutant Discharge Elimination System Permit LA0007374

In a renewal application addendum to the Waterford Steam Electric Station, Unit 3 (Waterford 3), Louisiana Pollutant Discharge Elimination System (LPDES) Permit LA0007374 submitted June 15, 1998, Waterford 3 requested that the temperature and heat discharge limits of 110°F and 8.5 x 10^9 MBTU/Hour included in the National Pollutant Discharge Elimination System (NPDES) permit for Outfall 001 (once-through non-contact cooling water), be increased to 118°F and 9.5 x 10^9 MBTU/Hour, respectively to facilitate a planned "power uprate" to be implemented in the near future at Waterford 3 [reference Section IX of Waterford 3 LPDES permit fact sheet].

Therefore for Waterford 3's current operating LPDES Permit, the Louisiana Department of Environmental Quality's (LDEQ) evaluation of temperature and thermal discharge increases took into account the planned power uprate. Based on LDEQ's evaluation described in the fact sheet that was prepared on July 22, 1998, for Waterford 3 LPDES Permit LA0007374, the following conclusions were made:

- A violation of the 5°F allowable rise of temperature above ambient at the edge of the mixing zone (LAC 33:IX.1113.C.4.b.i(a)) would not occur with a discharge limitation for temperature at 118°F.
- Approximately 81% of the river flow would be unaffected by the temperature increase after the Waterford 3 power uprate, even under extreme low flow conditions.
- LAC 33:IX.1115.C.7 specifies the mixing zone for streams with 7Q10 flow greater than 100 cubic feet per second (cfs) as either 100 cfs or 1/3 of the flow, whichever is greater. The anticipated thermal mixing zone of 19% is substantially less than 33% of cross-sectional area or 1/3 of the flow. Therefore, the increased heat discharge and temperature limits requested for Outfall 001 are expected to meet Louisiana Water Quality Criteria for temperature.
- Because the heated water is less dense than the cooler ambient river water, the combined thermal mixing zone remains near the surface.

Therefore, LDEQ granted Waterford 3 the following increases that are included in the current LPDES Permit:

- Temperature – Daily maximum limit was increased from 110° F to 118°F. There are no monthly average limits imposed in the permit.
- Thermal Discharge BTU - Daily maximum limit was increased from 8.5E09 MBTU/Hour to 9.5E9 MBTU/Hour.

As further discussed in PUR Section 5.2.3.1 of the environmental section of the Waterford 3 extended power uprate submittal, during full load and design flow conditions, the circulating water discharged to the Mississippi River is approximately 16.1°F above the intake temperature. However, based on current plant operating conditions the amount of water passing through the main condenser is less than the design flow rate. Therefore during power uprate conditions, after combining with the turbine closed component cooling water system heat exchangers and the steam generator blowdown system, the circulating water discharged to the river will be approximately 18.6°F above the intake temperature which is 2.2°F above the design rate of 16.1°F. Based on previous years of compliance monitoring as it relates to the circulating water discharge temperature, the highest temperature recorded was 107.9°F in September 1999. If the 2.2°F increase from power uprate was added to this highest temperature recorded measurement, it would total 110.1°F, which is still below the daily maximum temperature discharge limitations of 118°F outlined in Waterford 3 LPDES Permit LA0007374.

Therefore, based on the conclusions described in Waterford 3's LPDES permit fact sheet and the expected temperature increase from power uprate, temperature and thermal discharge BTU limits defined in the current LPDES Permit are adequate. Therefore, no changes are necessary to LPDES Permit LA0007374.

Changes to Chemical Usage

As discussed in Section 5.2.3.2 of the environmental section of the Waterford 3 extended power uprate submittal, water treatment chemical usage at Waterford 3 is regulated by the LDEQ via LPDES Permit LA0007374. This permit authorizes discharges from fourteen outfalls as shown below. Chemicals that are currently being utilized or have the potential to be utilized have been listed in the Waterford 3 LPDES permit renewal application that was submitted to the LDEQ on January 27, 2004. Although some chemical formulations changed and new products were added as compared to the previous LPDES permit renewal application, none were added or changed for purposes of the power uprate.

Outfall	Description
001	Once-Through Cooling Water
004	Stormwater
005	Treated Sanitary Wastewater
101	Liquid Waste Management System
104	Miscellaneous Intermittent Wastewater
201	Boron Management System
204	Vehicle Wash Wastewater
301	Filter Flush Water
401	Steam Generator Blowdown
501	Auxiliary Component Cooling Water Basin A
601	Auxiliary Component Cooling Water Basin B
701	Dry Cooling Tower Sump #1
801	Dry Cooling Tower Sump #2
901	Metal Cleaning Wastewater

Water treatment chemicals (potential or equivalent) that are currently regulated and approved by the LDEQ for use in the once-through non-contact cooling water (Outfall 001) are shown below. The use of these chemicals or addition of new ones will not change as a result of the

power uprate. Chemicals typically utilized in the once-through cooling water are associated with zebra mussel treatments such as Clam-Trol CT-2 (macrofouling) and DTG Clay (detoxification). However, zebra mussel treatments have only occurred twice since the plant became operational. Therefore, the power uprate will have no impact on current water chemical usage.

- Chlorine (macrofouling)
- Clam-Trol CT-2 (macrofouling)
- DTG (Clay) (detoxification)
- EC-220 (anti-defoamer)
- EVAC Biocide (macrofouling)
- PCL-401 (dispersant)
- Sodium Bisulfite (dechlorination)
- Sodium Hypochlorite (biological control)
- Thruguard 710 (corrosion inhibitor)
- Towerbrom 960 (biocide)

Question 4:

Will the operational characteristics of the cooling towers change in any way as a result of the EPU? If the changes result in increased noise levels, please provide the noise abatement arrangements, if any.

Response 4:

The increased heat loading for the ultimate heat sink, resulting from the extended power uprate, can be handled within the existing system design. The wet and dry cooling towers are therefore not being modified to support the extended power uprate (reference Power Uprate Report (PUR) Section 2.5.5.4). Therefore there will be no increase from existing noise levels.

Question 5:

Is there any designated critical habitat for threatened, endangered species in the vicinity of the river discharge? Please provide a basis for the statement in Section 5.2.5, which states that there are no known Federally-protected species in the vicinity of the site, and how this determination was made.

Response 5:

To determine if there were any threatened and endangered species in the vicinity of the site, a review of Louisiana's PARISH/SPECIES LIST was reviewed at http://www.deq.state.la.us/permits/lpdes/species.pdf. This list identifies federally listed or proposed United States (U.S.) species in Louisiana by Parish and has been updated through March 7, 2002. Based on this list, there are five species identified in St. Charles Parish (Bald Eagle, Brown Pelican, Gulf Sturgeon, Pallid Sturgeon and West Indian Manatee). Based on later correspondence with the U.S. Fish and Wildlife Service in March 2004 regarding critical

habitats designated for threatened and endangered species, specifically within the vicinity of the Waterford 3 intake and discharge structures (three miles upstream and three miles downstream of the Bonnet Carre Spillway located near Mississippi River Mile 128), no critical habitat areas were identified by the agency. However, the agency did identify the pallid sturgeon and West Indian manatee as two endangered species that could potentially be found in the Mississippi River. Based on conversations with the agency, the following information regarding these two species was obtained:

- Pallid sturgeons are found in both the Mississippi and Atchafalya Rivers and possibly the Red River as well. Detailed habitat requirements of this fish is not known but is believed to spawn in Louisiana. Habitat loss through river channelization and dams has adversely affected this species throughout its range.
- West Indian manatees occasionally enter Lakes Pontchartrain and Maurepas and associated coastal waters and streams during the summer months (June – September). Manatees have been reported in the Amite, Blind, Tchefuncte and Tickfaw Rivers and in canals within the adjacent coastal marshes of Louisiana. Although rare and infrequent, sightings have occurred on the Mississippi River, and one sighting was observed several consecutive days near the mouth of the river in 1975. They have also been occasionally observed elsewhere along the Louisiana Gulf coast. The manatee has declined in numbers due to collision with boats and barges, entrapment in flood control structures, poaching, habitat loss and pollution. Cold weather and outbreaks of red tide may also adversely affect these animals.

Based on the information obtained from the U.S. Fish and Wildlife Services, impacts from the Waterford 3 power uprate project to the pallid sturgeon and West Indian Manatee will be insignificant based on the following:

- There are no designated critical habitats in the vicinity of the Waterford 3 intake and discharge structures for these two species.
- The Waterford 3 power uprate will not result in a further decline of suitable habitat for these species.
- Sightings of West Indian manatees are rare and infrequent with the most recent sighting in 1975 over a hundred miles downstream of Waterford 3.
- Neither of these species has been observed in the vicinity of Waterford 3.

Question 6:

Describe any changes in the number of personnel required in both normal operations and for outages to implement the proposed EPU.

Response 6:

No changes are being made for the power uprate that would require additional staff. Therefore, Entergy has no plans to add additional staff to support normal plant operations due to power uprate.

Entergy has strived to reduce refueling outage lengths over the years at Waterford 3. The refueling outages lengths during 11 of the 12 Waterford 3 refueling outages lengths have generally decreased over time and have ranged between 25 days and 72 days with the most

recent outage being 33 days, 3 hours, 21 minutes. The other refueling outage, refueling outage (RF) 8, lasted 108 days and is considered to be an outlier for the purposes of this discussion. The average refueling outage length, excluding the 108 day outage, is approximately 49 days. Refueling (RF) outage 13, in which the EPU will be implemented, is currently being planned with a length shorter than the 49 day average and is therefore bounded by past outage lengths.

The maximum number of workers on-site during the last six refueling outages (RF7 through RF12) at Waterford 3 has ranged from 767 to 1071 excluding RF 8 when there were 1326 workers on-site. The average maximum number of workers on-site during RF7, RF9, RF10, RF11, and RF12 was 857. The maximum number of workers for RF13, while not yet determined, is expected to be consistent with past outages.

Question 7:

As a result of the EPU, there will be an increase in the amount of current carried in the transmission lines. Discuss the electric shock hazards associated with the increased current. Were the transmission lines designed and constructed in accordance with the applicable shock prevention provisions of the National Electric Safety Code? If not, provide an assessment of the impact of the proposed action on the potential shock hazard from the transmission lines.

Response 7:

Based upon an empirical investigation and equations and tables found in EPRI's "Transmission Line Reference Book – 345 kV and Above, Second Edition (1987)", Entergy determined that the two 230 kV transmission lines between Waterford 3 and the Waterford 3 switchyard do meet the current National Electric Safety Code (NESC) clearance requirements pertaining to the 5-mA standard. Equations and Tables utilized for this determination were as follows:

- For determining E (electric field strength), Equations (8.3.1) through (8.3.22)
- For determining I (induced short circuit current), Table (8.8.2)
- For single phase versus three phase induction, Equation (8.8.42)

Utilizing these equations, tables and geometry of the lines involved, the calculated induced short circuit current for a 65' long 18 wheeler was approximately 3.9-mA, which is within the NESC 5-mA standard.

Question 8:

Describe any changes to the secondary system as a result of the proposed EPU and what effects this will have on water use and generation of solid waste.

Response 8:

The proposed EPU will have no significant effect on the generation of solid waste from the secondary systems. As stated in PUR Section 2.1.10, normal operation of the steam generator blowdown system is 1% of feed water flow. Waterford maintains blowdown in the range of 75 gpm to 150 gpm to maintain system chemistry. There are no system chemistry changes necessary for EPU. This blowdown range will not change due to the proposed EPU. Approximately 800 cubic feet of resin is generated from the blowdown system annually. The amount of resin used is primarily dependent upon system impurities and also steam generator blowdown system flow. System impurities are typically the result of condenser tube leakage. Both of these parameters are independent of the proposed EPU and therefore any changes in resin waste generated post EPU could not be directly attributed to the EPU. Polisher resin is the second source of solid waste for the secondary systems. Resin is typically used in this system for startup and shutdown of the plant. The amount of resin is based on the impurities/system chemistry. The proposed EPU will not change the amount of resin waste generated as it will not change the amount of impurities in the system when it is utilized.

The proposed EPU will increase the required feedwater flow and the total mass flow of steam supplied. The total mass of the secondary system will not be affected. Current makeup to the secondary/auxiliary systems is performed to replace water lost from system leaks. The proposed EPU does not increase leaks in the system. Current water usage at Waterford 3 (70,000 gallons to 120,000 gallons per week- based on condensate storage tank levels) is not expected to change as a result of the proposed EPU.

Question 9:

Describe the environmental impacts associated with the design-basis accidents discussed in the latest version of NUREG-0800, "Standard Review Plan," the most limiting accident, and how the EPU will affect the accident analyses.

Response 9:

PUR Section 2.13 provides information on radiological analyses for EPU. Section 2.13.0.1 and 2.13.0.2 describe changes being made to analysis performed in support of the EPU. Section 2.13.0.5 provides a summary discussion on the radiological analyses. As discussed in PUR Section 2.13.0.1 and 2.13.0.5, in the case of non-LOCA transient events which experience violation of the specified acceptable fuel design limits (SAFDLs), the amount of fuel failure which results in dose equal to the regulatory acceptance limits (Standard Review Plan (SRP) per the current licensing basis) were calculated based upon the release path applicable to the event scenario. The change in post-EPU fuel failures and dose therefore is only indirectly related to EPU due to the decision to back calculate fuel failure based on dose acceptance limits. Pre-EPU, analysis predicts fuel failures and then determines the resulting dose which is then compared to the acceptance limits. Therefore, a comparison of pre- and post-EPU fuel failures and doses are of little value in quantifying the impact of EPU on the environment for design-basis accidents. All events analyzed for the current power level and EPU as presented in the FSAR and PUR, respectively, meet the SRP guidance for radiological consequences. Therefore, there are no adverse environmental dose consequences as a result of EPU.

The events for which the PUR reports radiological results are:

Event	PUR Section	Fuel Failure limit (%)	2 Hour EAB Whole Body (rem)	2 Hour EAB Thyroid (rem)	Duration LPZ Whole Body (rem)	Duration LPZ Thyroid (rem)
Inadvertent Opening of a Steam Generator (SG) Atmospheric Dump Valve (ADV)	2.13.1.1.4	0	< 2.5	< 30	< 2.5	< 30
Excess Main Steam Flow with Loss of Offsite Power (LOOP)	2.13.1.2.3	8.0	< 2.5	< 30	< 2.5	< 30
Inadvertent Opening of a ADV with LOOP	2.13.1.2.4	0	< 2.5	< 30	< 2.5	< 30
Main Steam Line Break (MSLB)	2.13.1.3.3	Note 1	<25	<300	<25	<300
Feedwater Line Break (FWLB)	2.13.2.3.1	0	< 2.5	< 30	< 2.5	< 30
Reactor Coolant Pump (RCP) Shaft Seizure	2.13.3.3.1	8.0	< 2.5	< 30	< 2.5	< 30
Control Element Assembly (CEA) Ejection	2.13.4.3.2	15.0	<25	<300	<25	<300
Letdown Line Break	2.13.6.3.1	0	< 2.5	< 30	< 2.5	< 30
Steam Generator Tube Rupture--GIS case (accident generated iodine spike)	2.13.6.3.2	0	< 2.5	< 30	< 2.5	< 30
Steam Generator Tube Rupture--PIS case (pre-existing iodine spike)	2.13.6.3.2	0	<25	<300	<25	<300
Loss of Coolant Accident (LOCA)	2.13.6.3.3	Note 2	7.0	23.0	3.0	21.0
Fuel Handling Accident (FHA)	2.13.7.3.4	Note 3	0.176	53.69	--	--

Note 1: MSLB fuel failure limit of $\leq$10% experiencing DNBR or $\leq$2% experiencing fuel melt. Reported fuel failure for other events is percent of fuel experiencing DNBR.
Note 2: Regulatory Guide 1.4, Revision 2, June 1974 assumptions apply.
Note 3: FHA assumes 4 rows of fuel rods fail structurally.

LOCA involves the largest source term, with postulated release of the entire core inventory to the containment. CEA ejection (due to relatively high fuel failure) and main steam line break (due to relatively high fuel failure and direct release to the environment) are generally regarded as the limiting events for non-LOCA radiological analyses.

As part of EPU, the assumed primary-to-secondary leak rate for steam generators was reduced from 720 gal/day per SG to 540 gal/day per SG. This serves to reduce the radioactive transport to the secondary system, which is an important parameter for events where secondary system integrity is not challenged, such as CEA Ejection or RCP Shaft Seizure.

Most of the non-LOCA events have been analyzed assuming that the RCS is cooled by steaming from the steam generators 8 hours into the event, at which time shutdown cooling is initiated. For such a scenario, plant conditions will be maintained by steaming to the environment through the ADV's until the 8.0 hour point, which conservatively over predicts radioactive releases.

All events analyzed for EPU and presented in the PUR meet the SRP guidance for radiological consequences for the subject events. All events analyzed for the current power level and presented in the FSAR meet the SRP guidance for radiological consequences. Therefore, there are no adverse dose consequences as a result of EPU.