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**Date:** 10/29/02 8:31AM  
**Subject:** NRC Waterford 3 SER EP Response Times Corrections

Mr. N. Kalyanam

As discussed attached are marked corrections regarding NRC Waterford 3 SER EP Response Times. Please contact me should you have any questions regarding this information.

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO EMERGENCY PLAN FOR

WATERFORD STEAM ELECTRIC STATION, UNIT 3

ENTERGY OPERATIONS, INC.

DOCKET NO. 50-382

1.0 INTRODUCTION

By application dated March 14, 2001, as supplemented by the letters dated April 13, 2001, and March 15 and September 9, 2002, and in accordance with 10 CFR 50.54(q), Entergy Operations, Inc. (Entergy or the licensee) submitted changes to the Waterford Steam Electric Station, Unit 3 (Waterford 3) Emergency Plan (EP) for Nuclear Regulatory Commission (NRC) review and approval prior to implementation. The April 13, 2001, supplemental letter provided replacement pages correcting editorial errors in the attachments to the March 14, 2001, letter. The supplemental letter dated March 15, 2002, provided information in response to several telephone conference calls with the licensee clarifying their proposed changes. In the supplemental letter dated September 9, 2002, the licensee provided information in response to the staff's request for additional information.

Following discussions between the staff and the licensee, the licensee, in its supplemental letter dated September 9, 2002, separated the proposed changes for onshift staffing for emergencies, and the licensee's capability to augment that staff in ~~30 and 60~~<sup>75</sup> minutes, from the licensee's proposed changes to Emergency Response Facility (ERF) staffing time goals. Onshift staffing for emergencies, and the licensee's capability to augment that staff are required by planning standard 10 CFR 50.47(b)(2), which is not classification-dependent. ERFs, particularly the Technical Support Center (TSC) and the Emergency Operations Facility (EOF), including their activation and operational times, are required by planning standard 10 CFR 50.47(b)(8), which is classification-dependent. Page 5-2, Section 5.1.2.1, of the Waterford 3 EP indicates that the onshift Emergency Coordinator may augment the onshift staff at any time, regardless of the classification level. Additionally, some of the licensee's proposed changes relate to Waterford 3 EP Table 5-1, which provides information for the licensee's minimum onshift staffing for emergencies and the licensee's capability for augmentation of the minimum onshift staffing for emergencies. The Table lists positions (i.e., Communicator, Health Physics (HP) Technicians, etc.), the number of personnel to fill those positions onshift and the augmentation of the emergency onshift personnel in ~~30 and 60~~<sup>75</sup> minutes, and the tasks the personnel in these positions will perform.

The staff has reviewed the licensee's proposed changes and condensed them as follows:

### 1.1 Extend Response Times for Emergencies

This captures the licensee's proposed changes identified in its letter dated March 14, 2001, to extend the time for the licensee's capability to augment the onshift staff for emergencies by extending the response time for certain key emergency response organization (ERO) staff from 30 and 60 minutes to 75 minutes for activation and 90 minutes for operational when these personnel are offsite, and 45 minutes when onsite; defines the terms activation, augmentation, and operational; revises Table 5-1 (attached) to specify major functional areas and associated tasks; specifies in the Waterford 3 EP that Waterford 3 takes exception to the guidance in NUREG-0654, Table B-1, regarding response times; and specifies in the Waterford 3 EP that response times are maximum response times and ERO personnel response is expected to be expeditious and timely.

### 1.2 Specification of Activation and Operational Times for ERFs

This captures the licensee's proposed change in its March 14, 2001, letter to activate the EOF at any time and shall be activated at an Alert or higher emergency classification.

### 1.3 Specification of Staffing and Augmentation Capabilities for Emergencies

This replaces the proposed changes in the licensee's March 14, 2001, letter to specify which positions must be filled to declare the TSC, operational support center (OSC) and EOF operational. This proposed change was withdrawn in the September 9, 2002, supplemental letter and replaced with the information in Section 1.1 above.

## 2.0 REGULATORY EVALUATION

The NRC staff finds that the licensee identified the applicable regulatory requirements in the original submittal dated March 14, 2001. The regulatory requirements and guidance for which the NRC staff based its acceptance are:

### 2.1 Regulations

- 10 CFR 50.47(b)(1) states, in part: "...and each principal response organization has staff to respond and to augment its initial response on a continuous basis."
- 10 CFR 50.47(b)(2) states, in part: "... adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, timely augmentation of response capabilities is available and ..."
- 10 CFR 50.47(b)(8) states: "Adequate emergency facilities and equipment to support the emergency response are provided and maintained."
- 10 CFR 50.47(b)(9) states: "Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use."

### 2.2 Guidance

- Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors," Revision 2, states, in part: "The criteria and recommendations contained in Revision 1 of NUREG-0654/FEMA [Federal Emergency Management Agency]-REP-1 are considered by the NRC staff to be acceptable methods for complying with the standards in 10 CFR 50.47 that must be met in on-site and off-site emergency response plans."

- NUREG-0654/FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," states in part:

In Section B. Onsite Emergency Organization, "5. Each licensee shall specify ... functional areas of emergency activity... These assignments shall cover the emergency functions in Table B-1 entitled, "Minimum Staffing Requirements for Nuclear Power Plant Emergencies." The minimum onshift staffing shall be as indicated in Table B-1. The licensee must be able to augment onshift capabilities within a short period after declaration of an emergency. This capability shall be as indicated in Table B-1..."

In Section H. Emergency Facilities and Equipment, "1. Each licensee shall establish a Technical Support Center ... in accordance with NUREG-0696, Revision 1," and "2. Each licensee shall establish an Emergency Operations Facility ... in accordance with NUREG-0696, Revision 1."

In Section I. Accident Assessment, "8. Each organization ... shall provide methods, equipment and expertise to make rapid assessments of the actual or potential magnitude and locations of any radiological hazards ... This shall include activation, notification<sup>16</sup> means, field team composition, transportation, communication, monitoring equipment and estimated deployment times."

- NUREG-0696, Revision 1, "Functional Criteria for Emergency Response Facilities," states, in part: in subparagraph 2.3. "Upon activation of the TSC, ... achieve full functional operation within 30 minutes," and in subparagraph 4.3. "Upon EOF activation, ... achieve full functional operation within 1 hour."
- NUREG-0737, Supplement 1, "Clarification of TMI [Three Mile Island Nuclear Station] Action Plan Requirements," states, in part: in subparagraph 8.2.1.a. "The TSC will perform EOF functions for the Alert Emergency class and for the Site Area Emergency class and General Emergency class until the EOF is functional," and in subparagraph 8.2.1.j. "TSC - ... be fully operational within approximately 1 hour after activation..." and in subparagraph 8.4.1.j. "EOF - Staffed using Table 2 (previous guidance approved by the Commission) as a goal. Reasonable exceptions to goals for the number of additional staff personnel and response times for their arrival should be justified and will be considered by NRC staff."

NUREG-0396/EPA [Environmental Protection Agency] 520/1-78-016. " Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants," dated December 1978, prepared by a U.S. NRC and U.S. EPA Task Force on emergency planning.

The applicable regulation for making changes to a licensee's EP is 10 CFR 50.54(q). This regulation states that licensees may change their radiological EP without Commission approval only if the changes do not decrease the effectiveness of the plan, and the plan, as changed, continues to meet the planning standards of paragraph 50.47 and the requirements of Appendix E to 10 CFR Part 50. The licensee states in the application that the EP changes were submitted for NRC staff review and approval in accordance with 10 CFR 50.4 and 50.54(q).

### 3.0 EVALUATION

The NRC staff has reviewed the licensee's regulatory and technical analyses in support of its proposed EP changes which are described in its application dated March 14, 2001, and supplemented by letters dated April 13, 2001, and March 15 and September 9, 2002. The licensee stated that the proposed change will enhance the EP. However, two changes, namely 1) revising response times based on the standard of realistic response times, and 2) reducing the EOF staffing levels required to declare the EOF operational, were considered, individually, a reduction in the effectiveness of the EP. As a result, the licensee requested NRC review and approval pursuant to 10 CFR 50.54(q). In the March 15, 2002, supplemental letter, the licensee stated the ERF functions would be stated in the Waterford 3 EP and requested approval for the minimum staffing of each ERF. Following discussions with the staff, the licensee indicated in its September 9, 2002, supplemental letter that the functions would be stated in the plan, however, the minimum staffing for each facility would be evaluated by the licensee under 10 CFR 50.54(q) to determine if NRC approval was needed.

#### 3.1 Revision of Response Times for Emergencies

##### 3.1.1 Licensee's Justification

The licensee proposed in its March 14, 2001, letter that the response times for certain key ERO personnel be changed from 30 and 60 minutes to 75 minutes for activation and 90 minutes for operational when ERO personnel are offsite. If key ERO personnel are on onsite, the facilities would be required to be fully operational in 45 minutes. The 75-minute activation time is based on 10 minutes for event classification and call out, 60 minutes maximum driving time, and 5 minutes for egress from the parking lot to facility. In its September 9, 2002, supplemental letter, the licensee indicated that the proposed change involved a revision to response times for emergencies.

As part of its justification for these changes, the licensee defined the terms: activation, augmentation, and operational as follows:

**Activation** - Actions taken to staff and setup an emergency facility for operation. Includes notification of emergency personnel, equipment setup and equipment operability testing.

**Augmentation** - Actions taken to support onshift personnel prior to emergency facilities becoming OPERATIONAL.

Operational - Status of an emergency facility declared by the appropriate facility manager upon determining that the facility is adequately staffed and equipment is setup and available to perform the emergency functions assigned to that facility.

Page 1-5, Section 1.1.59 of the Waterford 3 EP indicates the definition meets the intent of the term "fully operational" as described in Supplement 1 to NUREG-0737. "OPERATIONAL" and "fully operational" are used interchangeably in the Waterford 3 EP.

The licensee also proposes to revise Table 5-1 to specify major functional areas and associated tasks. The licensee stated that the NRC staff had accepted an identical table specifying major functional areas and associated tasks for Grand Gulf Nuclear Station and River Bend Station.

Operations - The licensee stated that operations crews are purposefully overstaffed compared to requirements of NUREG-0654, Table B-1 and that this is a planned staffing decision to ensure personnel are onshift to facilitate handling postulated emergency events. The licensee indicated that simulator training usually begins with a normal operating condition and escalates to an accident condition that enables the crew to enter the Emergency Implementing Procedures and that during this time, the operations staff performs the functions they would normally be required to perform in an emergency condition prior to the OSC, TSC, or EOF becoming operational. The conduct of these drills demonstrates the ability to adequately perform such key functional tasks as event classification, offsite dose assessment/calculations, offsite communications/notifications, accident mitigation, core thermal hydraulics, and team prioritization and tracking. In the September 9, 2002, supplemental letter, the licensee committed to supplement the operator dose assessment training to include a basic understanding of: (1) the design and assumptions used in the control room dose assessment program; (2) meteorological data factors (Stability Class, wind speed, delta T, wind direction) and their effects on a radiological release; and (3) the major release pathways at Waterford 3 and the default isotopic mix used for each pathway.

Communicator - The licensee stated the initial communicator for any event is a Nuclear Equipment Auxiliary<sup>2</sup> Operator from the onshift crew which ensures immediate availability and a technical background to provide ability to comprehend/communicate the plant equipment and process issues. The individual serves as Emergency Notification System Communicator until the TSC/Control Room Communicator arrives and assumes the responsibility. The licensee indicates improvements were made in the emergency preparedness program, equipment, and readiness which take some of the burden off of the communicator and provide further justification for allowing the response time goal change. Improvements were made in (1) ERO notifications, (2) offsite notifications, and (3) NRC notifications.

~~Radiation Protection and Chemistry-<sup>3</sup> The licensee stated that part of the bases for extending the augmentation time for HP responders were: (1) automated worker access control; (2) Electronic Alarming Dosimeters (EADs), Area Radiation Monitors (ARMs), and self-frisking; (3) performance of Radiation Protection (RP) coverage when needed; and (4) performance of onsite surveys when needed. The licensee indicated that offsite surveys are available when the ERO is fully implemented. Radiological monitoring of the installed instrumentation would be sufficient for the first 60<sup>75</sup><sup>1</sup> to 90 minutes of an accident with onsite, out-of-plant surveys used for verification, as needed. Offsite radiological survey tasks such as soil, water, and vegetation sampling or environmental thermoluminescent dosimeter retrieval can be performed when additional augmentation personnel arrive in 60 to 90<sup>75</sup><sup>1</sup> minutes. These particular samples are not used as input parameters for offsite dose assessment calculations. These types of radiological survey tasks would be considered in the recovery phase, following an offsite release of radioactive material, and are not needed for the immediate protection of the public health and safety. Chemistry technicians are trained to perform dose assessment, and the onshift chemistry person would report to the main control room to perform dose assessment-<sup>3</sup>~~

Technical Support - The licensee stated that technical support personnel are provided to support supplemental actions need to ensure the plant stays in a stable condition, restore capabilities needed for control of the plant, and assist in planning/preparing necessary corrective maintenance. The licensee states that these functions are not needed during the initial stage of an emergency. The technical support personnel are needed for assessing the extent and impact of damage, practical long-term stabilization options, priority corrective maintenance, and other plant recovery work.

Maintenance - The licensee stated that, due to the time needed to stabilize the plant and assess the event, the initial phase of an accident scenario is not expected to involve a large need for maintenance personnel. The maintenance staff onshift will primarily be available to the ~~Operations Shift Superintendent (OSS)~~ Shift Manager (SM)<sup>4</sup> to assist in controlling/mitigating the event. Only after the plant is stable and in a status that is understood can attention be refocused to corrective maintenance that may be needed to restore plant conditions. Maintenance personnel can be used as needed by the ~~OSS~~ SM<sup>4</sup> for decontamination support, observation, or other duties in the initial stages of an event. Until the reactor plant is stabilized and the causal agents are discerned, actual repairs or realignment of plant equipment should not require large-scale maintenance support.

### 3.1.2 NRC Staff Evaluation

Use of the words activation and operational apply to ERFs (planning standard 10 CFR 50.47(b)(8)). The use of augmentation applies to the licensee's capability to augment the onshift staff for emergencies (planning standard 10 CFR 50.47(b)(2)).

The licensee had mixed the proposed response times for the capability to augment the onshift emergency staff with time goals for activating, staffing, and declaring ERF operational. The NRC staff used the evaluation criteria under Part II, Section B, "Onsite Emergency Organization," of NUREG 0654, in order to determine if the licensee's proposed change to the onshift staffing and the licensee's capability to augment that staff would continue to meet the requirements of planning standard 10 CFR 50.47(b)(2). The NRC staff used Part II, Section H, "Emergency Facilities and Equipment," of NUREG-0654, to determine if the licensee's proposed changes to the operational time goals, such as, staffing of the ERF and assuming the functions

for these facilities as specified in the EP, met the requirements of planning standard 10 CFR 50.47(b)(8).

The Waterford 3 EP currently provides 30 to 45 and 60<sup>8</sup> to 75 minutes for the licensee's capability to augment the onshift staff for emergencies in 30 and 60 minutes, respectively<sup>8</sup>. The licensee's onshift staff for emergencies includes an additional HP technician Radiation Protection Department assignee<sup>9</sup>, which the NRC staff has accepted as an alternative for bringing in additional HP technicians in 30 minutes in conjunction with the licensee's capability to augment the onshift staff HPs in 60<sup>75</sup><sup>1</sup> minutes. Therefore, sufficient compensation has been provided to not have 30-minute HP technicians and to extend the response time for augmentation to 90<sup>75</sup><sup>1</sup> minutes. The staff does not accept (1) automated worker access control; (2) EADs, ARMs and self-frisking; (3) performance of RP coverage when needed; and (4) performance of onsite surveys when needed as a basis for extending that responders time.

The positions in Table B-1, NUREG-0654, whose response time would be extended to 90<sup>75</sup><sup>1</sup> minutes (although footnote "c" to each position indicates 75 minutes (45 minutes if onsite))<sup>10</sup> are one Duty Plant Manager, one TSC Nuclear Engineer (Core/Thermal Hydraulics), three Emergency Communicators, one EOF Director, one HP Coordinator (Dose Assessment or Radiological Assessment or Field Team Controller), one Chemistry Technician, one Electrical Engineer, one Mechanical Engineer, two Mechanical Maintenance, two Electrical Maintenance, and two Instrumentation and Control (I&C) Maintenance personnel. The response time for eleven RP personnel would be extended to 90<sup>75</sup><sup>1</sup> minutes.

By adding an additional HP technician Radiation Protection Department assignee<sup>9</sup> to the onshift staff for emergencies, the licensee has provided sufficient compensation to extend the time to augment the onshift HP emergency staff to 90<sup>75</sup><sup>1</sup> minutes. Having the capability to perform offsite dose assessment onshift is required by Section IV.B of Appendix E to 10 CFR Part 50. The NRC staff has indicated that the task may be performed by shift personnel assigned other duties, such as the Chemistry Technician Nuclear Auxiliary Operator.<sup>3</sup>

The following factors were evaluated as part of the NRC staff's review of the licensee's proposal to extend the times for the capability to augment the minimum emergency onshift staffing for emergencies. The NRC staff's evaluation of information within the Waterford 3 EP provided by the licensee concerning some of these factors, as applicable, is discussed below:

#### (1) Description of Normal Plant Operating Organization

Section 13.3.4.1, of the Waterford 3 EP provides a description of the normal operating organization at Waterford 3. Although the licensee states that the operations crews for emergencies is purposefully overstaffed compared to the requirements of NUREG-0654 Table B-1, this table only indicates the minimum staffing requirements for emergencies. The licensee's current proposed<sup>11</sup> staffing exceeds the minimum onshift staffing for emergencies guidance by having three additional Auxiliary Operators, one additional RP Technician Radiation Protection Department assignee<sup>9</sup>, and one additional Electrician/I&C Technician. The normal operating organization and the increase in the onshift staff for emergencies would provide part of the basis for allowing the remaining 30-minute responders to augment the emergency onshift staff in 60<sup>75</sup><sup>1</sup> minutes. Additionally, this would provide part of the basis for allowing the remaining augmenting personnel to respond in 90<sup>75</sup><sup>1</sup> minutes.<sup>10</sup>

#### (2) Increase the ERO Pool

In its March 14, 2001, letter, the licensee provided a table which indicated the time for Waterford 3 emergency responders to arrive at their duty stations if an emergency occurred at Waterford 3. This table showed that by extending the augmentation time to 75 and ~~90~~<sup>1</sup> minutes, a greater fraction of the Waterford 3 staff would be able to participate in the ERO. It indicates approximately 53% of the ERO can respond in 30 to 55 minutes and 91% of the ERO can totally augment in 60 to 75 minutes, which should allow the staffing of the licensee's ERFs within their operational time goals. However, allowing an additional 30 minutes would expand the pool of resources from which the licensee could draw upon. The licensee has stated that upon notification of an emergency, all responders are notified by a computerized call out system and the first person to fill a position will<sup>5</sup> report to their assigned duty station; ~~when a position is filled, excess personnel are allowed to return home.~~<sup>5</sup>

The licensee has demonstrated that extending the augmentation time for the ERO would increase the pool of personnel from which emergency responders could be called upon to allow extending response times to ~~60 and 90~~<sup>1</sup> 75 minutes.

### (3) Early Activation of ERFs

To support this change, the licensee indicated all emergency facilities are activated at the Alert emergency classification. In the September 9, 2002, supplemental letter, the licensee indicated the proposal is to increase the operational time goal for all emergency facilities to 90 minutes (See Section 3.2 below). The staff indicated that activating the OSC and TSC at the Alert emergency classification is expected and activating the EOF at the Alert would exceed the staff's expectation that it be activated at the Site Area Emergency.

Additionally, the licensee will specify in the Waterford 3 EP that response times are maximum response times and ERO personnel response is expected to be expeditious and timely. This is acceptable and supports the concept of timely activation staffing and operation of ERFs as well as the licensee's capability to augment the onshift staff for emergencies.

#### 3.1.3 Summary

The licensee has provided sufficient compensation for the current 30-minute responders to be moved out to ~~60~~<sup>1</sup> 75 minutes by adding additional staff to the onshift staff<sup>12</sup> for emergencies. This also provides a basis for extending the 60 minute capability to ~~90~~<sup>1</sup> 75 minutes. The staff has accepted alternative methods for times for which the licensee has the capability to augment the onshift staff for emergencies. The proposed change would not be a decrease in the effectiveness of the Waterford 3 EP and is acceptable.

## 3.2 Specification of Activation and Operational Times for ERFs

### 3.2.1 Licensee's Justification

The licensee's justifications for extending the times to declare ERFs operational within 90 minutes include: (1) Waterford 3 currently staffs all ERO facilities at an "Alert" classification; (2) all ERO teams are notified and expected to respond at the Alert classification; (3) plant policies, procedures, processes, and training are in place; (4) plant personnel demographics - personnel who staff the ERFs relocating and thus require more time to travel to the site;

(5) Waterford 3 population density; (6) probabilistic risk assessment (PRA) considerations; and (7) severe accident management guideline (SAMG) considerations.

(1) Staff all ERO facilities at an "Alert"

The licensee stated that the two highest classifications, Site Area Emergency and General Emergency, are most likely to need augmentation from offsite personnel and that all emergency facilities are activated at these classifications. In its application, the licensee states that the specific requirements proposed are for the TSC and OSC to be operational within 90 minutes of an Alert declaration. ~~The proposed requirement for the EOF is for it to be operational within 90 minutes of a Site Area Emergency (SAE) or General Emergency (GE) declaration.~~ OSC, TSC, and EOF to be activated at any time, but shall be activated at an ALERT, Site Area Emergency, or General Emergency. Once activated the OSC, TSC, and EOF shall become operational as soon as possible after declaration of any of these emergency classifications and be fully operational in 90 minutes.<sup>13</sup> ~~The licensee also states that the operational goal for the EOF, should it be activated at the Alert, is also within approximately 90 minutes.~~ The licensee defines "operational" for each facility in terms of the positions that are required by the Waterford 3 EP to be staffed in order to be capable of performing its specified function(s).

(2) All ERO teams notified and expected to respond at an "Alert"

The licensee stated that the Emergency Director ~~Coordinator~~<sup>6</sup> can initiate staff augmentation whenever the situation warrants. Additionally, the licensee indicated multiple ERO teams are maintained, with one team being on-duty/on-call each week. When an emergency is declared, ERO members who have pagers are paged and are expected to report to their respective facilities. Personnel who do not carry pagers are called. In the letter dated March 14, 2001, the licensee states that ERO personnel are expected to respond immediately and without delay upon notification, regardless of their location at the time. A proposed revision to Section 5.1.2.1 "Onshift Emergency Organization," of the Waterford 3 EP states that the Shift Manager (who becomes the Emergency Coordinator in an emergency) can direct additional personnel to respond immediately to augment the shift staff at any time, regardless of the status of plant conditions or the emergency class.

(3) Plant policies, procedures, processes, and training

The ~~90~~<sup>75</sup> minute augmentation time is expected to be the maximum time for personnel to respond to an off-hours notification. The licensee stated that the allowance of ~~90~~<sup>75</sup> minutes will not be applied as permission to delay response to an event and that this management expectation is emphasized in training. The first person ~~for to fill~~<sup>5</sup> a position ~~to arrive at a reports to the~~<sup>5</sup> facility ~~and~~<sup>5</sup> assumes that role whether or not they are the assigned duty team. The licensee stated this conservative policy ensures the rapid mobilization of the necessary personnel to augment the shift personnel.

#### (4) Plant personnel demographics

In the letter dated March 14, 2001, the licensee indicated that some plant personnel live far enough away from the plant that they are precluded from being assigned to the ERO. Also, the proposed changes will increase the number of eligible plant personnel to fill critical ERO positions and add valuable expertise. The licensee also indicates that the proposed changes establish realistic response times for the ERO and for staffing ERFs.

#### (5) Waterford 3 population density

The licensee stated that Waterford 3 is a remote site, pursuant to the siting standards contained in 10 CFR Part 100. In the letter dated March 14, 2001, the licensee states there are no general site characteristics or general population features that are at variance with 10 CFR Part 100. The licensee also states that the population within a two mile radius of the plant is considered small enough so that prompt protective actions could be taken by Entergy and appropriate offsite (State and local) authorities prior to full augmentation by the ERO.

#### (6) PRA considerations

In the March 14, 2001 letter, the licensee stated ~~the PRA indicated that extending the~~ augmentation time would not have a negative affect on the health and safety of the public, as substantiated by the PRA<sup>14</sup>.

#### (7) SAMG considerations

In the letter dated March 14, 2001, the licensee stated that the proposed changes to the Waterford 3 EP do not pose a risk to the public health and safety, as substantiated by the SAMGs.

### 3.2.2 NRC Staff Evaluation

NUREG-0737, Supplement 1, Section 8.2.1.j, states in part, that the TSC will "...be fully operational within 1 hour after activation." The licensee's proposed changes would exceed this guidance. However, the licensee has proposed other changes sufficient to justify extending the ERF operational time to 90 minutes and meet planning standard 10 CFR 50.47(b)(8) which states: "Adequate emergency facilities and equipment to support the emergency response are provided and maintained."

Activating the EOF at any time, but requiring it to be activated at an Alert or higher emergency classification, is acceptable. Having it operational within 90 minutes of an Alert as opposed to within 60 minutes of a SAE would provide for the early staffing and transfer of certain functions to unburden the control room and the TSC. For those accidents which progress from an Unusual Event, a bases for activating/staffing the TSC within ~~60~~<sup>75</sup> minutes has been provided, and activating it within a goal of ~~90~~<sup>75</sup> minutes following the declaration of an Alert would not be a decrease in the effectiveness of the Waterford 3 EP. For those accidents which would immediately be classified as a SAE or GE, delaying the operational time goal for the EOF an additional 30 minutes would have a minimal effect in that (1) additional persons have been added onshift, (2) there is a low frequency of SAE and GE classified accidents, and (3) it is the licensee's goal to have the TSC operational within 45 minutes with onsite personnel and 90 minutes with offsite personnel. The TSC would be operational within ~~60 to 75~~<sup>90</sup> minutes and

capable of handling the EOF functions until the EOF was operational. The staff has accepted extended times for the EOF as an alternative method for satisfying planning standard 10 CFR 50.47(b)(8).

The NRC staff used the following evaluation to form the basis for evaluating the licensee's proposal to extend the times to augment the minimum emergency onshift staffing in the event of an emergency.

- (1) Staff all ERO facilities at an "Alert" - The licensee indicated all ERFs will be activated at the Alert emergency classification. However, as discussed above, the licensee proposes to increase the operational time goal for all emergency facilities to 90 minutes. Current guidance is for the licensee to activate the TSC and OSC at the Alert emergency classification. The early activation of the EOF would provide part of the basis to extend the 30 and 60 minute capability to augment the onshift staff for emergencies to ~~60 and 90 minutes, respectively~~ 75 minutes<sup>1</sup>.
- (2) All ERO teams are notified and expected to respond at an "Alert" - Although the licensee states that the operations crews for emergencies are purposely overstaffed compared to NUREG-0654, Table B-1, this table only indicates the minimum staffing requirements for emergencies. The licensee's onshift staffing, as shown in its proposed Table 5-1, exceeds the minimum onshift staffing for emergencies guidance by having three additional Auxiliary Operators, one additional Electrical or I&C Maintenance Technician, and one additional HP Technician, for a total of five additional personnel. The onshift staffing for emergencies, as shown in proposed Table 5-1, provides an acceptable alternative to extending the 30 and 60 minute responders augmentation times to ~~60 and 90~~ 75<sup>1</sup> minutes, respectively, and would provide part of the basis for extending augmentation times.
- (3) Plant policies, procedures, processes, and training - The Waterford 3 EP Section 5.4, "Manpower and Timing Considerations," states "The expectation is that emergency response personnel will respond as quickly as possible but no later than the maximum times listed below." Also, the licensee states that the Shift Manager can direct additional personnel to respond immediately to augment the shift staff at any time, regardless of the status of plant conditions or the emergency classification. Section 5.1.2.1 of the Waterford 3 EP will state, "The Emergency Coordinator may augment the onshift staff at any time during an emergency situation, regardless of the classification level." The licensee further states that the proposed ~~60 and 90~~ 75<sup>1</sup> minute augmentation is expected to be the maximum time for personnel to respond to a notification. These actions provide for augmentation of the onshift staff prior to the goal of declaring the ERFs operational within 90 minutes of an Alert. Assuring ERO personnel respond immediately and without delay upon notification, regardless of their location at the time, and providing the emergency coordinator the authority to call personnel to support the onshift staff for emergencies provides part of the basis for extending the operational time goals for ERFs.

- (4) Plant personnel demographics - The licensee provided a table which showed the typical response times for the Waterford 3 ERO. The table indicated over 70% of the Waterford 3 responders can respond in 50 to 65 minutes. The licensee indicated that this percentage was not representative of the persons needed to fill positions necessary for Table 5-1 and for ERF operational times. However, the licensee indicated that upon notification of an emergency, all responders are notified and the first person to fill a position will<sup>5</sup> report to their assigned duty station, ~~and when a position is filled, excess personnel are allowed to return home. Therefore, the licensee plans to cross-train responders or have interim persons/positions to have the facility operational until required personnel for Table 5-1 or ERF operational times arrive.~~<sup>5</sup> The proposed changes to extend augmentation times will increase the number of eligible plant personnel to fill critical ERO positions and add valuable expertise. Therefore, expanding the ERO pool would provide part of the basis for 30 and 60 minute responders to be extended to ~~60 and 90~~ 75<sup>1</sup> minutes, respectively.
- (5) Waterford 3 population density - The licensee's information related to site demographics and population density was not considered in the evaluation of the request to extend the activation times for the ERFs, since the licensee has established a capability for promptly notifying responsible State and local governmental agencies within 15 minutes of declaring an emergency, has demonstrated that the State and local officials have the capability to make a public notification decision promptly upon being informed by the licensee of an emergency condition, and has demonstrated that administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway Emergency Planning Zone (EPZ).
- (6) PRA considerations - The licensee's information related to PRA was not considered in the evaluation of the request to extend the activation times for the ERFs, since risk has already been considered in the determination of the size of the EPZs. NUREG-0396 states that the size of the EPZ is based on the rationale of a full spectrum of accidents and corresponding consequences, tempered by probability considerations.
- (7) SAMG considerations - The licensee's information related to SAMG considerations was not considered in the evaluation of the request to extend activation times for the ERFs, since the Waterford 3 SAMGs are intended for use in the TSC which may not be operational for 90 minutes following the declaration of an Alert.

### 3.2.3 Summary

The NRC staff finds the alternative times for ERF activation/staffing (operational) time goals acceptable. Currently, the Waterford 3 EP indicates that the ERF activation time goal is 60 minutes. Extending the ERF operational time goals to 90 minutes from the declaration of an Alert is acceptable due to the compensation provided by adding additional emergency responders onshift for emergencies, the required prompt response of ERO personnel, the increase in the ERO organization pool of available personnel, and early activation of the EOF. Extending the EOF operational time goal to 90 minutes is acceptable, provided the Waterford 3 EP continues to indicate the EOF will be activated at the Alert. Therefore, extending the time allowed to activate the ERFs would not be a decrease in the effectiveness of the Waterford 3 EP and the change is acceptable.

### 3.3 Specification of Staffing and Augmentation Capabilities for Emergencies

Initially, in its letter of March 14, 2001, the licensee proposed to specify which positions must be filled to declare the TSC, OSC, and EOF operational. Following the NRC staff's review and discussions with the licensee, this proposal was revised by the September 9, 2002, supplemental letter. The licensee then indicated that the proposed revision was to specify, generally, staffing and augmentation capabilities for emergencies. The staff has reviewed the licensee's submittals and determined that NRC review is not required in that the staffing and augmentation capabilities are connected to the licensee's proposed changes as discussed in Sections 3.1 and 3.2 of this Safety Evaluation. Therefore, the staff determined another review of them was not necessary.

### 3.4 Commitments

The NRC staff finds that reasonable controls for the implementation and for subsequent evaluation of proposed changes pertaining to the commitments, provided by the licensee in Attachment 4 to the September 9, 2002, supplemental letter, are best provided by the licensee's administrative processes, including its commitment management program. The above commitments do not warrant the creation of regulatory requirements (items requiring prior NRC approval of subsequent changes).

### 4.0 CONCLUSION

The NRC staff concludes that the licensee's proposed changes to the Waterford 3 EP submitted by application dated March 14, 2001, as supplemented by the letters dated April 13, 2001, and March 15 and September 9, 2002, are acceptable. The NRC staff also concludes that the Waterford 3 EP changes meet the planning standards of 10 CFR 50.47(b) and the requirements of Appendix E of 10 CFR Part 50. These Waterford 3 EP changes shall be implemented within 120 days from the date of receipt of the NRC staff's letter approving the changes.

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Attachment: Table 5-1

Date: September 30, 2002

#### NOTES:

1. The Waterford 3 submittal proposed a 75 augmentation time and a 75 minutes activation time for ERFs. The SER incorrectly indicated "60", "90" or "60 and 90" minutes times for augmentation and activation times in several places.
2. The correct terminology for non-licensed operators at Waterford 3 is Nuclear Auxiliary Operator, not Nuclear Equipment Operator.
3. At Waterford 3 the Nuclear Auxiliary Operator, filling the position of Emergency Communicator, performs dose assessment until the TSC personnel arrive. Waterford 3 never mentioned or committed to Chemistry performing this function.
4. At Waterford 3, the senior onshift operator is the Shift Manager (SM), not the Operations Shift Superintendent.

5. At Waterford 3, ERO personnel are notified by a computerized call out system which sets off all ERO pagers. ERO personnel call in and the first person for each position fills the position. This person responds to the plant and performs the duties of the position. If the person filling the position is not the duty person, the duty person is also expected to respond and relieve the person who originally filled the position. During discussions of the submittal it was not discussed that all ERO personnel respond and then extra personnel are sent home.
6. The Control Room facility manager at Waterford 3 is the Emergency Coordinator, not the Emergency Director.
7. The Waterford 3 submittal proposes the TSC to be operational in 90 minutes, not 60-75 minutes.
8. Current EP provides for 30 and 60 minutes for augmenting onshift staff
9. Radiation Protection Department Personnel is the person included Table 5-1 of EP, Entergy Waterford 3 submittal dated September 9, 2002.
10. With correction, statement is not required.
11. The statement and staffing described reflect the staffing proposed by Entergy Waterford 3 submittal dated September 9, 2002.
12. Grammatical clarification.
13. Waterford 3 did not make a distinction in the activation of the facilities based on emergency classifications. The revised wording reflects the changes proposed by Waterford 3 submittal dated September 9, 2002.
14. The correction more accurately reflect the statement made by Waterford 3 in the March 14, 2001 letter.
15. Field Team Controller is the position listed in EP Table 5-1 of the Waterford 3 submittal dated September 9, 2002.
16. Grammatical correction, "notificaton" changed to "notification".