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U. S. Nuclear Regulatory Commission
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RBG-47290

Subject: Entergy's Response to the March 12, 2012, Information Request Pursuant to 10 CFR 50.54(f) Regarding Recommendation 9.3 for Completing Emergency Communication Assessments
River Bend Station – Unit 1
Docket No. 50-458
License No. NPF-47

- REFERENCES:
1. NRC letter to Entergy, *Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident*, dated March 12, 2012 (RBC-51012) (ML12053A340)
 2. Entergy Letter to NRC (RBG-47239), *Entergy's 60-Day Response to the March 12, 2012, Information Request, Action Plan for Completing Emergency Communication and Staffing Assessments*, dated May 10, 2012
 3. Entergy Letter to NRC (RBG-47247), *Entergy's 90-Day Response to the March 12, 2012, Information Request, Action Plan for Completing Emergency Communication and Staffing Assessments*, dated June 8, 2012
 4. Nuclear Energy Institute (NEI) 12-01, *Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities*, Revision 0 (May 2012)

Dear Sir or Madam:

On March 12, 2012, the NRC issued a letter (Reference 1) entitled, *Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding*

AXYS
NRR

Recommendations 2.1, 2.3, and 9.3 of the Near-Term Task Force (NTTF) Review of Insights from the Fukushima Dai-ichi Accident. Enclosure 5 of the letter contains specific requested actions and requested information associated with Recommendation 9.3 for Emergency Preparedness programs communications. In accordance with 10 CFR 50.54, "Conditions of licenses," paragraph (f), addressees were requested to submit a written response to the information requests within 90 days or provide a response within 60 days of the date of the letter and describe the alternative course of action that it proposes to take.

Entergy Operations, Inc. (Entergy) responded within 60 days (Reference 2) proposing to take the alternative course of action for communications that was described in Attachment 1 of Reference 2. Entergy implemented the first part of this alternate course of action with the submittal of Reference 3 which described interim actions or planned actions to be taken to enhance existing communications systems power supplies until the communications assessment and the resulting actions are complete. This letter completes the alternate course of action by summarizing the results of the communications assessment and the potential enhancements that could be made.

The communications assessment was performed using the guidance of NEI 12-01 (Reference 4) and identified enhancements that may be appropriate for the emergency plan with respect to communications requirements of 10 CFR 50.47, Appendix E to 10 CFR 50, and the guidance in NUREG-0696. The current planned enhancements are discussed in Attachment 1. The new regulatory commitment is identified in Attachment 2. These enhancement commitments are subject to change as a result of Diverse and Flexible Coping Strategies (FLEX) developments, advances in technology and progress in the manner of addressing the need for these enhancements.

Should you have any questions regarding the content of this letter, please contact Mr. Joseph Clark, Manager, Licensing at (225) 381-4177.

I declare under penalty of perjury that the foregoing is true and correct. Executed on October 31, 2012.



EW0/JCR/JAC/wjf

- Attachments: 1. River Bend Station Communications Assessment
2. List of Regulatory Commitments

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ATTACHMENT 1 TO RBG-47290

RIVER BEND STATION

COMMUNICATIONS ASSESSMENT

1. EXECUTIVE SUMMARY:

The assessment of the current communications systems and equipment used at the River Bend Station (RBS) during an emergency event as defined by NEI 12-01, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities" (Reference 4) has identified several areas where enhancements could be made in order for the Emergency Plan (EP) equipment to survive a Beyond-Design-Basis External Event. These enhancements are listed in Table 10, "Summary of Enhancements" and include the following:

- (1) Sizing of existing UPS batteries in EP facilities to ensure that adequate power capacity exists
- (2) Correction of various seismic-related issues related to Anchorages, Spatial Interactions and Housekeeping in EP facilities
- (3) Purchase of the necessary number of satellite phones, portable radios and spare batteries to ensure all communications links are fully functional

2. METHODOLOGY:

This report is based on the recommended criteria from NEI 12-01, for use in identifying enhancements that will ensure the availability of critical communications capabilities during an extended loss of AC power, including evaluation of power sources for communications equipment. This approach provides the flexibility to perform a communications capability assessment that accommodates specific site needs while, at the same time, ensuring consistency with industry-developed standards, and NRC regulations and guidance.

The assessment focused on the communication systems to be credited. For example, existing telephone communications are assumed to be inoperable and therefore are not credited or evaluated in this assessment. Communication links are assumed to be established via satellite phones and use of the existing site radio system(s). Walk downs to evaluate the equipment locations and function were performed.

Enhancements identified within the assessment will be further developed as implementation progresses. Alternate approaches will be utilized if prudent (e.g. alternate/new technology, improved capability, cost savings, etc.).

3. ASSUMPTIONS:

- Extended loss of AC power event
- Successful plant shutdown
- No hostile action
- 6 hours post event – no site access
- 6-24 hours post event – limited site access, individual access by walking, personal transport or alternative transport
- 24+ hours post event – site access restored to near normal status
- Installed sources of AC power not available
- Non-essential loads from DC battery sources are stripped per station procedures

- Installed inverters and battery chargers remain available provided they are protected from external events
- Onsite diesel fuel oil is available provided it is stored in a protected manner from external events
- Portable equipment may be used provided it is stored onsite and protected from seismic, wind and flooding events. Includes portable AC and DC power sources
- Onsite communications infrastructure remains available provided it is protected from seismic, wind and flooding events.
- Offsite communications infrastructure is inoperable out to 25 miles
- Communications equipment located at an offsite response facility and supplied from a backup power source is assumed to be functional.

4. COMMUNICATIONS DURING AN EXTENDED LOSS OF AC POWER:

NEI 12-01 Section 4, "Communications During an Extended Loss of AC Power," provides the basis for the following assessment.

4.1 Required Emergency Communication Capabilities (NEI 12-01 Section 4.1)

The RBS Emergency Planning Department has reviewed the communications links and has determined the method of communications (i.e. radio or satellite phone) for each defined link and overall the number of satellite phones and radios needed. RBS has performed an analysis and determined that a total of 26 satellite phones and 29 radios are needed to establish the required links. Based on the analysis performed, no additional spare batteries are needed. There may be an opportunity to optimize the amount of equipment needed. The RBS analysis was tracked in the Entergy corrective action program as LO-HQNLO-2011-0138, CA-00026.

4.2 Plant Paging (Announcement) System (NEI 12-01 Section 4.2)

NEI 12-01 Section 4.2 requires notification of the plant staff at the onset of the event. The RBS plant paging system provides public address capability over a large portion of the site. Considering the event as defined by NEI 12-01, the system is limited primarily by the lack of system wide back up power. Although portions of the system may be available, it will not be credited as available for notification of plant personnel. Alternative measures should be established instead. A tracking item will be generated to evaluate this requirement (Table 11, Item #1).

4.3 Communications Equipment at ORO (Offsite Response Organization) Facilities (NEI 12-01 Section 4.3)

Per NEI 12-01, "Some communications capability should be available at the ORO facilities that normally receive licensee notifications of an emergency declaration or a Protective Action Recommendation." The RBS Emergency Planning Department has assessed capabilities as their ORO facilities per LO-HQNLO-2011-0138 CA-00036. All nine (9) ORO facilities (West Feliciana Parish, East Feliciana Parish, West Baton Rouge Parish, East Baton Rouge Parish, Pointe Coupee Parish, Governor's Office of Homeland Security & Emergency Preparedness (GOHSEP), Louisiana Department of Environmental Quality (LDEQ), Mississippi Emergency Management Agency (MEMA), and the Mississippi Highway Patrol (MHP)) have backup

power. Based on the analysis performed, no additional communication capabilities (i.e. satellite phones) will be required at the ORO facilities.

4.4 Notification of the Emergency Response Organization (ERO) (NEI 12-01 Section 4.2)

NEI 12-01 offers two potential options to promote timely staff augmentation by the ERO. RBS will ensure that "ERO members are trained to automatically respond to their assigned facilities or a designated staging area when made aware of a wide loss-of-grid (eg. by direct observation, media reports, word-of-mouth, etc.)." This expectation has been established with the ERO (see LO-HQNLO-2011-0138 CA-00016). This expectation will also be included in annual ERO requalification training. A tracking item will be generated to include this expectation (Table 11, Item #3).

4.5 Equipment Location Requirements (NEI 12-01 Section 4.5)

Communication equipment to be used or considered operable, "should be in a location and maintained in a manner that maximizes survivability following a beyond design basis external event. In particular, the location or manner should reasonably preclude wetting from flooding or impact damage from a seismic event." The communication links as defined by NEI 12-01 should be established using satellite phones and radios. Existing, installed communications equipment to be credited (i.e. considered operable) is limited to the plant radio system(s). Assessments have been performed, including walkdowns, of the existing installed radio equipment. Enhancements are recommended to address some identified concerns associated with the equipments' ability to survive a seismic event. Structural capability of the equipment support/mounting as well as impact from adjacent equipment and/or stored material should be addressed. A minor issue associated with wetting from flooding was identified for the Services Building 1st floor (95' elevation) battery room. See Sections 4.13.1 - 4.13.4 for details. Programmatic requirements need to be established to ensure the credited equipment is maintained in a manner that maximizes survivability. A tracking item will be generated to establish these requirements (Table 11, Item #4).

4.6 Performance Characteristics (NEI 12-01 Section 4.6)

The RBS Emergency Planning Department has evaluated the required communications pathways to determine if the current systems are sufficient to support the emergency communications needs following severe environmental events. Where the current system did not meet the communications needs following severe environmental events, enhancements were identified. These enhancements are summarized in Table 10. The results are shown in Sections 4.13.1 - 4.13.4.

The performance characteristics as identified in this section of NEI 12-01 requires that communication pathways (e.g., radio channels, satellite phone) designated to support multiple functions must be analyzed to demonstrate that they can simultaneously support both functions. The RBS Emergency Planning Department has assessed capabilities on a radio channel by radio channel or satellite phone device basis and did not identify where a single communication pathway was assigned to support multiple functions.

4.7 Other Assessment Considerations (NEI 12-01 Section 4.7)

Enhancements (physical and programmatic) are recommended to ensure considerations, as identified in this section of NEI 12-01, are met. Provisions for portable backup power sources and batteries for battery operated equipment should be established. A tracking item will be generated to establish these provisions (Table 11, Item #5).

4.8 Quality and Maintenance-Related Requirements (NEI 12-01 Section 4.8)

The requirements identified in this section of NEI 12-01 should be incorporated into the program for ensuring the credited equipment is maintained in a manner that maximizes survivability. A tracking item will be generated to incorporate these requirements (Table 11, Item #6). A corporate level policy or procedure that takes the PF Project and puts requirements on it (e.g., housekeeping, walkdown by procedure), such that the facilities are maintained free of storage items and satellite phones are maintained and charges are adequate. This may include documenting inventories and adding PMs for periodic testing of the satellite phones, chargers.

4.9 National Communications System (NCS) Services (NEI 12-01 Section 4.9)

Entergy IT has assessed the NCS services per LO-HQNLO-2011-0138 CA-00045. Entergy IT recommends that Government Emergency Telephone Service access cards be acquired for key RBS positions. See CA-00045 for additional discussion. A tracking item will be generated to track this recommendation (Table 11, Item #7).

4.10 Communication Provider Emergency Services (NEI 12-01 Section 4.10)

Entergy IT has contacted the major communications service providers which service the Entergy nuclear fleet (i.e. Verizon and AT&T). Neither company has a separate emergency services priority other than government TSP (Telecommunications Service Priority), which was assessed per LO-HQNLO-2011-0138 CA-00046. No further action is required. For further discussion, see LO-HQNLO-2011-0138 CA-00046.

4.11 Personnel Training (NEI 12-01 Section 4.11)

The requirements identified in this section of NEI 12-01 are recommended to be incorporated into the Entergy Emergency Training program. Evaluate existing training to determine if the adequacy and periodicity of training is sufficient. A tracking item will be generated to incorporate these requirements (Table 11, Item #8).

4.12 Emergency Plan (E-Plan) Identified Systems Overview

The following sections summarize the communications systems discussed in the RBS E-Plan, Section 13.3.6.2. The E-Plan Sections 13.3.6.2.1 and 13.3.6.2.2 state that communications may be established by different means (radio, phone, public address system). For the purposes of this evaluation, the communications capabilities in E-Plan Sections 13.3.6.2.1 and 13.3.6.2.2 are assumed to be successfully met if they are continuously available for 72 hours after the loss of onsite and offsite AC power via any method or combination of methods (radio, satellite phone, administrative controls, etc.). It is acknowledged that the majority of the installed EP systems have deficiencies which would prevent their survival in the Beyond-

Design-Basis External Event. See Sections 4.13.1 - 4.13.4 for details concerning enhancements.

4.13 Equipment Locations and Capabilities

The communications functions, radio reception/transmission equipment, and protection of each location from seismic, wind, and flooding are discussed below. Specifically, the structural capacity of the equipment in its current configuration was evaluated for its ability to withstand the identified external hazards. These hazards include seismic, flooding, and high winds. The structural evaluation was based on engineering judgment developed by a consensus of two engineers experienced in structural design and construction. The sections below provide a summary of the area walkdowns and their potential configuration concerns that could present challenges in maintaining an operable communication system in the event of one or more of the identified environmental hazards.

The EP Communications Equipment is located above the design basis flood elevation for the plant or is otherwise protected. The design basis flood elevation for RBS is 96 ft. This includes wave action and an upstream dam failure coincident with maximum precipitation and a standard hurricane.

4.13.1 Normal Switchgear Building (NSB)

Location and General Description

The NSB is classified as a non safety-related structure and is designed Seismic Category II with interior and exterior masonry walls above grade. The NSB is a three-story structure located south of the Control Building with a basement floor slab at the 67'-6" elevation. The two upper floors are located at 96' and 123'-6" elevation. The two upper floors consist of concrete supported by a steel deck and beams. The exterior walls above elevation 98' are constructed using concrete blocks. The communications equipment is located in an air conditioned communication room in the NSB (123'-6" elevation). Entrance is through an interior fire door from the stairwell. The antennae for the repeaters are located on a tower attached to the top of the NSB structure.

The NSB interior wall structure does not provide reasonable assurance that the EP Communications Equipment is protected during a seismic event, as defined in NEI 12-01. See "Seismic Protection" discussion below.

Equipment & Functionality

The communications equipment cabinet located in NSB (123'-6" elevation) houses the radio system cabinets. The communication equipment cabinet contains four repeaters (Operations, Maintenance, Radiological Field Monitoring, and Security). In addition, the Old Paging equipment, Radiax Antenna System, and combiner equipment is located in the communication equipment cabinets. The Operations and Maintenance Radio System is the primary radio communications network for normal onsite communication for Operations and Maintenance personnel. The Radiological Field Monitoring Radio Network is used to transmit offsite radiological data during an emergency. The Security Radio System is used to communicate with security personnel during normal and emergency conditions.

Remote radio stations are located inside and outside of the protected area. These stations provide coverage to interior and exterior areas of the plant. The antenna is located on a tower attached to the top of the NSB structure.

Power

Control Room Distribution Panel 1VBN-PNL01A1, circuit 6 provides power to the radio system equipment. Distribution Panel 1VBN-PNL01A1 receives its 120 VAC power from Transformer 1VBN-XRC20C1. The upstream power source, 13.8 KV Bus 1NPS-SWG1A, provides a main and alternate feed to Distribution Panel 1VBN-PNL01A1. The 13.8 KV power is stepped down to 120VAC thru a series of step down transformers. The communication equipment is backed up by a 40 KVA Uninterruptible Power Supply (UPS) System. It is recommended that the UPS batteries will be sized to provide adequate amp hour capacity as required (see Table 10, Item #1).

Seismic Protection

Switchgear, Inverter, and Battery Room NSB (123'-6" Elevation)
Seismic – ENHANCEMENT RECOMMENDED (see Table 10, Item #2)

- Anchorages - ENHANCEMENT RECOMMENDED

Issues:

- The black Motorola cabinets are not anchored to the floor. There is one bolt (in the vertical plane) tying the black Motorola cabinets to the gray cabinets. This attachment may not be seismically adequate.
- The batteries inside Battery Room C do not have seismic rails. The batteries are sitting on the rack and the battery rack is not anchored to the floor.

Acceptable Anchorage:

- The gray communication equipment cabinets are anchored to the floor. The anchorage of this equipment is seismically acceptable. There are no concerns regarding degraded anchorages.
- The Inverter and battery charger anchorage is acceptable. There are no concerns regarding degraded anchorages.

Spatial Interactions

Issues:

- The NSB is a non safety-related building with interior and exterior masonry walls above grade, which pose seismic II/I concerns to the communication equipment (radios cabinets, batteries, and inverter).

Acceptable Spatial Interactions:

- Cable raceways are approximately 50% filled and are mounted using standard Unistrut rod hanger hardware. The coiled cables tie wrapped to the inside of the cable tray above Inverter INVO1 are judged acceptable.

- Housekeeping

Issues:

- The communication equipment cabinets' door locks are broken. The cabinet doors are held closed using "Caution Tape".

Flood Protection – ACCEPTABLE

- Switchgear Room NSB (123'-6" Elevation)
 - There is a Fire Hose Station behind the communication equipment cabinets. The walkdown team could not see if it has Victaulic coupling on the fire piping due to insulation.
 - No additional concerns for the NSB since the communication equipment cabinets are located at the 123'-6" elevation. Per RBS USAR Table 3.4-1, the average plant grade is 94'-6" elevation and the design flood elevation is at 96', which would be caused by an occurrence of the Probable Maximum Flood in the immediate plant area prior to completion of excavation backfilling operations. The dynamic effect resulting from wave forces at this low level of ponding (1' to 1.5' at the plant buildings) is considered negligible.

High Winds Protection - ACCEPTABLE

The NSB is a seismic category II three story structure located south of the Control Building (CB). According to FSAR Section 3.9, normal wind loads applied to the buildings and structures is taken to be 100 mph, the annual extreme fastest mile speed, 30 ft. above ground for a 100-year recurrence interval, at the plant Site. The EP communication equipment inside the NSB is reasonably protected from wind effects.

4.13.2 Services Building (SB)

Location and General Description

The SB is classified as a non safety-related structure designed to the Uniform Building Code (UBC) and the Southern Building Code. The SB is a Seismic Category II three-story steel framed structure located east of the CB. The SB is equipped with a penthouse room at roof level. The exterior walls are constructed using concrete masonry blocks draped with metal siding. The building is supported by spread footings on compact fill. The Technical Support Center (TSC) and Operations Support Center (OSC) is located on the third floor at the +123' elevation in the SB.

The TSC is an onsite emergency response facility located near the Reactor Building. The TSC, as part of the SB, has been built in accordance with the UBC and provides habitability comparable to the Main Control Room. The TSC has been designed to have approximately 4500 square feet of working area to accommodate EOI personnel with specific TSC responsibilities. In addition, space is provided for pre-designated NRC response personnel.

The SB structure provides reasonable assurance that the EP Communications Equipment is protected during a seismic event, as defined in NEI 12-01.

Equipment & Functionality

The communications equipment is located on the second floor of the SB (109' elevation) in an air-conditioned environment. The communication equipment racks contain five Hotline Phone Systems (Corporate, Hospital, Shutdown, Facilities, and Security). In addition, the NRC Data Circuit and Site Radio Audio Bridges equipment is located in the communication equipment racks.

The Corporate Hotline is a dedicated system that serves the TSC, EOF, and Alternate EOF at Government Street (Baton Rouge). This system does not utilize any Central Branch Exchange (CBX) or public telephone services, but does use dedicated EOI pilotwire cables, fiber optic communications, and microwave facilities.

The Hospital Hotline provides a dedicated means of communication with the two hospitals designated to work with RBS during an emergency. Locations covered by this system include the Main Control Room, TSC, EOF, Our Lady of the Lake Hospital, and West Feliciana Hospital. This system does not utilize any CBX or public telephone services, but does utilize dedicated leased telephone circuits, EOI pilotwire cable, and fiber optic facilities.

The Shutdown Hotline provides a dedicated communications between the Main Control Room, OSC, TSC, Radiation Work Permit Office, and Hot Chemical Laboratory. It does not rely on any CBX or leased or public telephone facilities.

The Facilities Hotline is a dedicated onsite hotline, which serves the Main Control Room, TSC, OSC, and EOF. This system does not rely on any CBX or leased or public telephone facilities. It does utilize EOI pilotwire cable and fiber optic communication facilities.

The Security Hotline provides a dedicated means of communication between the West Feliciana Sheriff's Office and the RBS Security Groups located in the Security Alarm Stations.

Power

Distribution Panelboard 1SCA-PNL9K2, circuit 12 provides power to the communication equipment racks. Distribution Panelboard 1SCA-PNL9K2 receives its 120 VAC power from Transformer 1SCA-XD9K2. The upstream power source is connected to 13.8 KV Bus 1NPS-SWG1B. The 13.8 KV power is stepped down to 120VAC thru a series of step down transformers. The communication equipment is backed up by a 1KVA Uninterruptible Power Supply (UPS) System. As an enhancement, the UPS batteries will be sized to provide adequate amp hour capacity as required (see Table 10, Item #3).

Seismic Protection

Seismic – ENHANCEMENT RECOMMENDED (see Table 10, Item #4)

- Anchorages - ENHANCEMENT RECOMMENDED

Issues:

- The battery rack located on the 1st floor (95' elevation) is not properly anchored to the floor.

Acceptable Anchorage:

- The anchorage for the inverter, battery charger, and communication equipment racks located on the 2ND floor (109' elevation) is acceptable.
- The TSC equipment (ESP computer, State and Local Hotline Phone, and radio console) are located on the desktop. There are no concerns due to the equipment small mass.
- The small satellite phone on wheeled cart in the OSC is judged acceptable. There are no seismic concerns due to the equipment small mass.

- Spatial Interactions

Issues:

- Acoustical ceiling tiles with 2' X 4' fluorescent lighting in the Old PBX and New PBX room judged acceptable.

Acceptable Spatial Interactions:

- The masonry block walls in the 1ST floor (95' elevation) battery room are judged acceptable although the batteries are not properly anchored to floor.
- The communication equipment inside the SB is reasonably protected from adverse seismic spatial interactions.

- Housekeeping

Issues:

- Minor issue related to a computer chair on wheels near communication equipment racks.
- The casters for the Mod 80 phone cabinet next to the inverter rack are not locked.

Flood Protection- ENHANCEMENT RECOMMENDED (see Table 10, Item #5)

- The only concern from flooding is associated with the batteries located in the 1ST floor (95' elevation) battery room. The postulated one foot height of floodwater can short out the lower bank of batteries. Although the exterior security door is not water tight, it will slow the ingress of water into the room. A simple solution could be to mount the battery rack on a raised concrete pad.
- No flooding concerns for the communication equipment located at Elevations 109' and 123'-6". Per RBS USAR Table 3.4-1, the average plant grade is 94'-6" elevation and the design flood elevation is at 96'.

High Winds Protection - ACCEPTABLE

According to Stone and Webster Calculation S25.5, the normal wind applied to the building is 110 mph per ANSI. The communication equipment located inside the SB is reasonably protected from high wind effects.

4.13.3 Fancy Point Radio Tower Site (FPRTS)

Location and General Description

The FPRTS consists of a radio house, microwave house, and tower structure located near the RBS 230 KV Switchyard. Both the radio house and microwave house are non safety-related pre-fabricated fiberglass trailer like structures on a skid beneath a metal covered roof. The small fiberglass structure skids are bolted to the concrete slab via uplift angle clamps. Although the fiberglass structures are non safety-related, their relative low profile was judged favorable in terms of seismic resistance. Per Drawing 12210-EY-8N-5, Sheet 2, the FPRTS is approximately at +114' elevation. Therefore, the FPRTS is above the RBS design flood level of +96'. The communication equipment is located within the radio house and 48 VDC batteries and battery charger are located within the microwave house.

The FPRTS structure provides reasonable assurance that the EP Communications Equipment is protected during a seismic event, as defined in NEI 12-01.

Equipment & Functionality

The radio house contains a State and Local Hotline, Trunking Radio System, Tone Alert Monitor Paging System, and three repeaters (Radiological Field Monitoring, Siren, and WFPSO Detective Radio repeater). The Radiological Field Monitoring team radio network is used to transmit offsite radiological data. The Siren radio is used to provide notification to the Control Room, EOF, and five offsite parishes. The Siren radio is part of the Prompt Notification System. The WFPSO Detective Radio is used to provide a dedicated means of communication between the West Feliciana Sheriff's Office and the RBS Security personnel located in the Security Alarm Stations.

The State and Local Hotline provides the direct communications links with the Governor's Office of Homeland Security and Emergency Preparedness, the Louisiana Department of Environmental Quality, the initial points of contact and EOCs in the local Parishes, the Mississippi Highway Patrol, and the Mississippi Emergency Management Agency. This system, plus the data circuit, serves as the primary means of communications between RBS and offsite authorities.

The Tone Alert Monitor Paging System repeater is one of several paging repeaters that is used by local parishes in performing notifications to special facilities.

The Trunking Radio System is used to communicate with offsite agencies during any type of emergency. It can provide communication links with local parishes and State agencies.

Power

Per verbal discussion with RBS engineering personnel during walk down, AREVA team was informed that communication equipment is fed from the Fancy Point and Grant Substations. In addition, the communication equipment is backed by UPS and a local propane powered generator unit. The power supply source documents for the communication equipment were not made available during the walkdown. In addition, RBS engineering personnel noted that no documentation exists to show the electrical interface between the radio house, microwave house, and the local propane powered generator unit. As an enhancement, the UPS batteries

will be sized to provide adequate amp hour capacity as required (see Table 10, Item #6).

Seismic Protection

Seismic – ENHANCEMENT RECOMMENDED (see Table 10, Item #7)

- Anchorages - ENHANCEMENT RECOMMENDED

Issues:

- The trunking system cabinets, radio cabinets, and communication equipment racks located inside the radio house are not anchored to the floor.
- The Motorola paging cabinet with wheels sits on plywood on the floor.
- The backup generator propane tank is not strapped to the concrete pad. In addition, the propane supply line to the generator consists of rigid piping. The supply line configuration has several hard spots, which can shear the line during a seismic event.

Acceptable Anchorage:

- There are no seismic concerns related to the UPS batteries and battery charger anchorage.
- There are no seismic concerns related to the antenna tower anchorage
- The mounting of the equipment to the racks is acceptable.

- Spatial Interactions

Issues:

- None

Acceptable Spatial Interactions:

- The lightly filled cable raceways are judged acceptable. There are no concerns related to the electrical conduits in the room.
- There are no acoustical ceilings in the radio house. The room lighting is judged acceptable.
- The raceways located above the equipment are lightly filled and judged acceptable.
- The small fiberglass structure skid is bolted to concrete slab via uplift angle clamps. Considering the low profile and the flexibility of both structures (a closed cell structure), the EP communication equipment inside the radio house and the microwave house is reasonably protected from adverse seismic spatial interactions.

- Housekeeping

Issues:

- There is a storage cabinet located next to the trunking system cabinet.
- There are several boxes of spare equipment stored on top of the radio cabinets.
- There are various boxes, trash, and plywood stored inside the radio house.

Flood Protection - ACCEPTABLE

Per Drawing 12210-EY-8N-5, Sheet 2, the FPRTS is approximately at +114' elevation. Therefore, the FPRTS is above the RBS design flood level of +96'. Therefore no flooding concerns are associated with the communications equipment located at the FPRTS.

High Winds Protection - ACCEPTABLE

Considering the low profile of the radio and microwave house structures and the fact that both structures survived Hurricane Gustav in 2008, the communication equipment located inside the structures is reasonably protected from wind effects. The existing metal roof mounted on 4X4 posts may not survive strong winds and may shear off. Since the metal roof is not attached to the radio and microwave structures, a catastrophic failure of the structures has been ruled out.

4.13.4 Emergency Operations Facility (EOF)

Location and General Description

The EOF is located within the RBS Training Center outside the plant security boundary near the intersection of U.S. Highway 61 and the River Bend Power Station Road. The RBS Training Center, in which the EOF is located, is outside the exclusion area and approximately 1.1 miles from the reactor building. The EOF is located on the 1ST floor of the RBS Training Center at the +132' elevation. The EOF radio house\dog house is a non safety-related pre-fabricated trailer like structure on a skid located across the parking lot on the North side of the RBS Training Center. The small fiberglass structure skid is bolted to the concrete pad via uplift steel clamps.

The EOF has been designed to meet the requirements as specified in Supplement 1 to NUREG-0737. The EOF wing is a one-story seismic category II structure. The building is supported by spread footings on compact fill. The exterior walls are concrete with brick face. The interior walls inside of the EOF wing are constructed using masonry blocks.

There is a natural gas generator located outside of the EOF. Since RBS does not provide power to the EOF, credit is taken for this generator in this assessment.

The EOF structure provides reasonable assurance that the EP Communications Equipment is protected during a seismic event, as defined in NEI 12-01.

Equipment & Functionality

The EOF communication equipment consists of the Tone Alert Monitor Radio, three Hotline Phone Systems (Corporate, Hospital, and Facilities) and State and Local Hotline Radio, a Civil Defense Radio, Offsite Team Radio System, and an Emergency Siren System radio as well as Pager System paging terminal.. The Paging System terminal is used for notifying the RBS emergency organization personnel. This system can be activated by a computer based application as well as regular telephone service to access the system and activate paging sequences.

The Tone Alert Monitor Radio is used by local parishes in performing notifications to special facilities.

The Corporate Hotline is a dedicated system that serves the TSC, EOF, and Alternate EOF at Government Street (Baton Rouge). This system does not utilize any Central Branch Exchange (CBX) or public telephone services, but does use dedicated EOI pilotwire cables, fiber optic communications, and microwave facilities.

The Hospital Hotline provides a dedicated means of communication with the two hospitals designated to work with RBS during an emergency. Locations covered by this system include Main Control Room, TSC, EOF, Our Lady of the Lake Hospital, and West Feliciana Hospital. This system does not utilize any CBX or public telephone services, but does utilize dedicated leased telephone circuits, EOI pilotwire cable, and fiber optic facilities.

The Facilities Hotline is a dedicated onsite hotline, which serves the Main Control Room, TSC, OSC, and EOF. This system does not rely on any CBX or leased or public telephone facilities. It does utilize EOI pilotwire cable and fiber optic communication facilities.

The State and Local Hotline Radio provides the direct communications links to connect the key emergency response facilities at RBS with GOHSEP, LDEQ, the 24 hour notification points, and the local emergency operations centers in the five local parishes, MHP, and MEMA. This system, plus the data circuit, serves as the primary means of communications between RBS and offsite authorities.

The Civil Defense Radio is used to communicate with offsite agencies during any type of emergency. It can provide communication links with local parishes and State agencies. The Radiological Field Monitoring team radio network is used to transmit offsite radiological data. The Siren radio is used to communicate with the sirens in the five local parishes from the EOF or Control Room. The Siren radio is part of the Prompt Notification System.

Power

Per verbal discussion with RBS engineering personnel during walk down, AREVA team was informed that EOF primary power feed comes from the Grant Substation. In addition, the communication equipment is backed up by multiple UPS units, battery banks, and a local 150 KVA natural gas powered generator unit. The power supply source documents for the communication equipment were not available during the walkdown. In addition, RBS engineering personal noted that no documentation exists to show the electrical interface between EOF and the local 150 KVA natural gas powered generator unit. As an enhancement, the UPS batteries will be sized to provide adequate amp hour capacity as required (see Table 10, Item #8).

Seismic Protection

Seismic – ENHANCEMENT RECOMMENDED (see Table 10, Item #9)

- Anchorages - ENHANCEMENT RECOMMENDED

Issues:

- The Siren 2 rack and the Teletouch paging cabinet are not anchored to the floor inside the EOF radio house\dog house.
- The backup battery charger rack and battery rack is properly anchored to the floor inside the EOF radio house\dog house.
- The 48-volt batteries inside the Simulator Battery Room are not seismically restrained. The batteries are sitting on the rack without seismic rails.
- The UPS cabinet is not anchored to the floor inside the storage room. Neither is the adjacent battery cabinet properly anchored to the floor. The batteries sit on metal shelving inside the cabinet with no seismic restraints.

Acceptable Anchorage:

- The Plexiglas, (0.5" thick) used to provide personnel protection and limit the battery lateral movement for the batteries in the EOF radio house\dog house is judged acceptable with no adverse seismic concerns.
- No concerns associated with the natural gas backup generator outside of the EOF. The natural gas line is made of HPDE and connected to the generator via a flexible hose.
- No concerns associated with the inverter rack, Mod 30, and Mod 80 phone cabinets located inside of the PBX Room. The telephone system backup battery rack is anchored to the floor.
- No seismic concerns on communication equipment (ESP computer, civil defense radio, or state and local hotline radio) located in the Siren Room.

- Spatial Interactions

Issues:

- None

Acceptable Spatial Interactions:

- Overhead ceiling tiles and 2' X 4' fluorescent lighting in the PBX Room is judged acceptable.
- The River Bend Training Center is a non safety-related building designed to UBC and Southern Building Code. The EP communication equipment inside the EOF is reasonably protected from adverse seismic spatial interactions based on the exterior concrete wall construction and being a single story building.
- The EOF radio house is a non safety-related pre-fab trailer like structure on skid. The small fiberglass structure skid is bolted to concrete via uplift steel clamps. Considering the low profile and the flexibility of the structure (a closed cell structure); the EP communication equipment inside the radio house is reasonably protected from adverse seismic spatial interactions.

- Housekeeping

Issues:

- There is a computer on a rolling cart located near the telephone batteries in the PBX Room.
- There are two (2) large tool chests on wheels near the UPS and battery cabinet in the storage room.

Flood Protection – ACCEPTABLE

No flooding concerns for the EP communication equipment at EOF since they are located at an elevation above the design flood elevation. The River Bend Training Center grade is approximately El. ~+132' and is well above the design flood elevation at El. +96' for RBS. This included the backup battery room and the diesel generator located outside of the building.

High Winds Protection – ACCEPTABLE

The River Bend Training Center is a non safety-related building designed to UBC and Southern Building Code. The EP communication equipment inside the EOF is reasonably protected from adverse wind effect based on the exterior concrete wall construction and being a single story building.

The EOF radio house is a non safety-related pre-fab trailer like structure on skid. The small fiberglass structure skid is bolted to concrete via uplift steel clamps. Considering the low profile and the flexibility of the structure (a closed cell structure) and the fact that the structure survived Hurricane Gustav in 2008 per plant engineers; the EP communication equipment inside the EOF radio house is reasonably protected from high wind effects.

5.0 ENHANCEMENTS:

5.1 Portable Satellite Phones / Radios

The RBS Emergency Planning Department has reviewed the communications links and has determined that a total of 26 satellite phones and 29 radios are needed to establish the required links (refer to Section 4.1). The evaluation identified that one additional satellite phone is needed. Additionally, spare batteries may also be needed.

Enhancement

As an enhancement, recommend purchase of necessary number of satellite phones and spare batteries to ensure that communications links are fully functional. See Table 10, Item #10

Table 1 Offsite Response Organization

Notifications to, and communications with, OROs [per 10 CFR 50 Appendix E.IV.D and E.9.a]

Emergency Response Facility	Minimum Communications Links	Primary Method Described in site E-Plan	Primary Method Available following Assumed Large Scale External Event (LSEE)?	Backup Method(s) Described in site E-Plan	Backup Method(s) Available following Assumed LSEE?	Planned or Potential Improvements Identified?
Control Room	1 per Control Room for Shift Communicator	Emergency Support Package/State and Local Hotline	YES	Plant-to-Offsite Radio System (Civil Defense Radio)	YES	NO
Technical Support Center (TSC)	1 for Key TSC Communicator	Emergency Support Package/State and Local Hotline	YES	Plant-to-Offsite Radio System (Civil Defense Radio)	YES	NO
Emergency Operations Facility (EOF)	1 for Key EOF Communicator	Emergency Support Package/State and Local Hotline	YES	Plant-to-Offsite Radio System (Civil Defense Radio)	YES	YES

Table 2 Nuclear Regulatory Commission

Notifications to, and communications with, the Nuclear Regulatory Commission (NRC) Headquarters Incident Response Center and the appropriate NRC Regional Office Operations Center [per 10 CFR 50 Appendix E.IV.D and E.9.d]

Emergency Response Facility	Minimum Communications Links	Primary Method Described in site E-Plan	Primary Method Available following Assumed LSEE?	Backup Method(s) Described in site E-Plan	Backup Method(s) Available following Assumed LSEE?	Planned or Potential Improvements Identified?
Control Room	1 per Control Room for ENS Communicator	ENS Bridge - Dedicated phone	NO	N/A	N/A	N/A
Technical Support Center (TSC)	1 for ENS Communicator	ENS Bridge - Dedicated phone	NO	Health Physics Network (HPN)	NO	NO
Location(s) where HPN communications are performed (TSC, EOF)	1 for HPN Communicator	ENS Bridge - Dedicated phone	NO	HPN	NO	YES

Table 3 Licensee Emergency Response Facilities

Communications between licensee emergency response facilities [per 10 CFR 50 Appendix E.9.c. Additional links that support performance of critical response functions are also specified.]. The minimum communications links to support this function are listed below by facility. For example, if the normally used telephone system cannot be restored to service, these links could rely upon some combination of radio, sound-powered and satellite-based communications systems.

Emergency Response Facility	Minimum Communications Links	Primary Method Described in site E-Plan	Primary Method Available following Assumed LSEE?	Backup Method(s) Described in site E-Plan	Backup Method(s) Available following Assumed LSEE?	Planned or Potential Improvements Identified?
Control Room	1 per unit	Onsite Hotline	YES	CBX	NO	NO
Technical Support Center (TSC)	1 each for: • Senior/Lead TSC Manager • Operations Coordination • Maintenance Coordination • Engineering Coordination • Radiological Support Additional response coordination links for multi-unit sites: • 1 for each position providing Unit Response Coordination	Onsite Hotline	YES	CBX	NO	NO
		Onsite Hotline	YES	CBX	NO	NO
		Onsite Hotline	YES	CBX	NO	NO
		Onsite Hotline	YES	CBX	NO	NO
		Health Physics Network	NO	CBX	NO	NO
	N/A	N/A	N/A	N/A	N/A	
Operational Support Center (OSC)	1 each for: • Senior/Lead OSC Manager • Radiological Support	Onsite Hotline	YES	CBX	NO	NO
		HPN	YES	CBX	NO	NO

Emergency Response Facility	Minimum Communications Links	Primary Method Described in site E-Plan	Primary Method Available following Assumed LSEE?	Backup Method(s) Described in site E-Plan	Backup Method(s) Available following Assumed LSEE?	Planned or Potential Improvements Identified?
	Additional response coordination links for multi-unit sites: • 1 for each position providing Unit In-Plant Team Coordination	N/A	N/A	N/A	N/A	N/A
Emergency Operations Facility (EOF)	1 each for: • Senior/Lead Manager • Key Protective Measures • Operations or Technical Support (as needed to support performance of dose projections, formulation of PARs and plant status updates to ORO authorities)	Onsite Hotline Onsite Hotline Onsite Hotline	YES YES YES	CBX CBX CBX	NO NO NO	YES YES YES
Joint Information Center (JIC)	1 for Senior Manager	CBX	NO	N/A	NO	NO

Table 4 Field / Offsite Monitoring Teams

Communications with field/offsite monitoring teams [per 10 CFR 50 Appendix E.9.c]

Emergency Response Facility	Minimum Communications Links	Primary Method Described in site E-Plan	Primary Method Available following Assumed LSEE?	Backup Method(s) Described in site E-Plan	Backup Method(s) Available following Assumed LSEE?	Planned or Potential Improvements Identified?
Primary location where field/offsite monitoring team coordination is performed (CR)	Field/offsite monitoring team coordination	Radiation Team Radio	YES	N/A	NO	NO
Primary location from which field/offsite monitoring teams are deployed (EOF)	1 for each field/offsite monitoring team	Radiation Team Radio	YES	N/A	NO	NO

Table 5 Other Federal Agencies

Communications with other Federal agencies as described in the site emergency plan (e.g., the US Coast Guard) [*per 10 CFR 50 Appendix E.9.b*]

Emergency Response Facility	Minimum Communications Links	Primary Method Described in site E-Plan	Primary Method Available following Assumed LSEE?	Backup Method(s) Described in site E-Plan	Backup Method(s) Available following Assumed LSEE?	Planned or Potential Improvements Identified?
Primary location where communication with Federal agencies is performed (CR, TSC, EOF)	Coordination with Federal agencies	ENS Bridge - Dedicated phone	NO	HPN	NO	NO

Table 6 On-site and In-plant Response Teams

Coordination and direction of on-site and in-plant response teams. This includes teams necessary to affect emergency repairs, firefighting, search and rescue, radiological monitoring, and implementation of Transition Phase coping and severe accident management strategies. To accommodate the timeline associated with NRC Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (as discussed in Section 1), this element should be assessed in 2 phases.

o Phase 1 – Current Configuration

Emergency Response Facility	Minimum Communications Links	Primary Method Described in site E-Plan	Primary Method Available following Assumed LSEE?	Backup Method(s) Described in site E-Plan	Backup Method(s) Available following Assumed LSEE?	Planned or Potential Improvements Identified?
On-shift staff	Number necessary for the on-shift staff to perform Initial Phase coping actions (reflecting current staff & strategies)	Hand-Held Portable Radio System	YES	NONE	NO	YES

Emergency Response Facility	Minimum Communications Links	Primary Method Described in site E-Plan	Primary Method Available following Assumed LSEE?	Backup Method(s) Described in site E-Plan	Backup Method(s) Available following Assumed LSEE?	Planned or Potential Improvements Identified?
Operational Support Center (OSC) and other site-specific locations as necessary	1 each for: • On-site radiological monitoring	RADIO	YES	NONE	NO	YES
	2 each for: • Firefighting (1 for brigade leader and 1 for the brigade)	RADIO	YES	NONE	NO	YES
	2 each per unit for: • In-plant radiological monitoring • Search and Rescue • Emergency repairs	RADIO	YES	NONE	NO	YES
	Site-specific number needed to implement any 2 severe accident mitigation strategies	RADIO	YES	NONE	NO	YES

o Phase 2 – Configuration with all FLEX strategies (LATER)

Table 7 Plant Paging (Announcement) System

Emergency Response Facility	Minimum Communications Links	Is this system available following assumed LSEE?	Planned or Potential Improvement Identified?
N/A	See assumptions and discussion in NEI 12-01	NO	YES

Table 8 Communications Equipment at ORO Facilities

Emergency Response Facility	Minimum Communications Links	Primary Method Described in site E-Plan	Primary Method Available following Assumed LSEE?	Backup Method(s) Described in site E-Plan	Backup Method(s) Available following Assumed LSEE?	Planned or Potential Improvement Identified?
Location where OROs receive notifications of an emergency declaration or a Protective Action Recommendation (as described in the site emergency plan)	At least one. See assumptions and discussion in NEI 12-01. <u>ORO FACILITY</u>					
	West Feliciana Parish	ESP System	YES	Local Parish Radio	YES	NO
	East Feliciana Parish	ESP System	YES	Local Parish Radio	YES	NO
	GOHSEP	ESP System	YES	Local Parish Radio	YES	NO
	LDEQ	ESP System	YES	Local Parish Radio	YES	NO
West Baton Rouge Parish	ESP System	YES	Local Parish Radio	YES	NO	

Emergency Response Facility	Minimum Communications Links	Primary Method Described in site E-Plan	Primary Method Available following Assumed LSEE?	Backup Method(s) Described in site E-Plan	Backup Method(s) Available following Assumed LSEE?	Planned or Potential Improvement Identified?
	East Baton Rouge Parish	ESP System	YES	Local Parish Radio	YES	NO
	Pointe Coupee Parish	ESP System	YES	Local Parish Radio	YES	NO
	MHP	ESP System	YES	Local Parish Radio	YES	NO
	MEMA	ESP System	YES	Local Parish Radio	YES	NO

Table 9 Equipment Locations and Protection

System/Equipment	Primary System Component Location	Equipment protected from the below hazards			Comments
		Protected from Seismic as defined in this document	Protected from Flooding as defined in this document	Protected from Wind as defined in this document	
EP Communication Equipment: (Radios, Repeaters, Battery Banks, Hotline Phone Systems, Audio Bridge, UPS, etc.)	NSB (+123'-6")	No	Yes	Yes	See Section 4.13.1 for details of protection conclusions
	SB (+95')	Yes	No	Yes	See Section 4.13.2 for details of protection conclusions
	SB (+109')	Yes	Yes	Yes	See Section 4.13.2 for details of protection conclusions
	SB (+123-6")	Yes	Yes	Yes	See Section 4.13.2 for details of protection conclusions
	FPRTS (+114)	Yes	Yes	Yes	See Section 4.13.3 for details of protection conclusions
	EOF (+132)	Yes	Yes	Yes	See Section 4.13.4 for details of protection conclusions

Table 10: Summary of Enhancements

#	Description	Section #
1	Size the 40 KVA UPS batteries to provide adequate amp hour capacity as required.	4.13.1
2	Issues related to Anchorages, Spatial Interactions and Housekeeping in the NSB are recommended to be addressed.	4.13.1
3	Size the 1KVA UPS batteries to provide adequate amp hour capacity as required.	4.13.2
4	Issues related to Anchorages, Spatial Interactions and Housekeeping in the SB are recommended to be addressed.	4.13.2
5	Issue related to flooding in the 1 ST floor (+95 elevation) battery room is recommended be addressed.	4.13.2
6	Size the FPRTS UPS batteries to provide adequate amp hour capacity as required.	4.13.3
7	Issues related to Anchorages and Housekeeping at the FPRTS are recommended to be addressed.	4.13.3
8	Size the EOF UPS batteries to provide adequate amp hour capacity as required.	4.13.4
9	Issues related to Anchorages and Housekeeping at the EOF are recommended to be addressed.	4.13.4
10	As an enhancement, recommend purchase of necessary number of satellite phones and spare batteries to ensure all communications links are fully functional.	5.1

Table 11: Tracking Items

The items listed below require a tracking item to be generated to track the disposition of the item and will be managed as enhancements per this submittal.

Item #	Description	Section #
1	Alternate means (in lieu of the PA system) for providing notification of the plant staff at the onset of the event should be developed.	4.2
2	Not Used	N/A
3	The expectation that "ERO members are trained to automatically respond to their assigned facilities or a designated staging area when made aware of a wide loss-of-grid (by direct observation, media reports, word-of-mouth, etc.)" will be included in annual ERO requalification training.	4.4
4	Programmatic requirements should be established to ensure credited equipment is maintained in a manner that maximizes survivability.	4.5
5	Provisions for portable backup power sources and batteries for battery operated equipment should be established.	4.7
6	The requirements identified in Section 4.8 of NEI 12-01 should be incorporated for ensuring the credited equipment is maintained in a manner that maximizes survivability.	4.8
7	Entergy IT recommends that GETS access cards be acquired for key RBS positions.	4.9
8	The requirements in Section 4.11 of NEI 12-01 should be incorporated into the Entergy Emergency Planning program.	4.11

ATTACHMENT 2 TO RBG-47290

LIST OF REGULATORY COMMITMENTS

List of Regulatory Commitments

The following table identifies those actions committed to by Entergy in this document. Any other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments.

COMMITMENT	TYPE (Check One)		SCHEDULED COMPLETION DATE (If Required)
	ONE-TIME ACTION	CONTINUING COMPLIANCE	
Enhancements identified within the assessment (Attachment 1, Tables 10 & 11) will be further developed as implementation progresses. Alternate approaches will be utilized if prudent (e.g., alternate/new technology, improved capability, cost savings, etc.). These enhancement commitments are subject to change as a result of Diverse and Flexible Coping Strategies (FLEX) developments, advances in technology, and progress in the manner of addressing the need for these enhancements.	X		By the end of RF18 (Spring 2015)