

March 12, 2007

Mr. Christopher M. Crane
President and Chief Executive Officer
AmerGen Energy Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: CLINTON POWER STATION, UNIT NO. 1 - RELOCATION OF THE
TECHNICAL SUPPORT CENTER (TAC NO. MD2468)

Dear Mr. Crane:

By letter to the Nuclear Regulatory Commission (NRC) dated June 30, 2006, as supplemented by letter dated December 19, 2006, AmerGen Energy Company, LLC requested approval of a change to the Clinton Power Station, Unit No. 1 (Clinton) Emergency Plan (EP) Annex. The request is to relocate the EP Annex to the technical support center (TSC) from its current location adjacent to the main control room to the training facility on the east side of the owner controlled area. The change to the EP will strengthen the TSC command and control function by allowing the TSC emergency response organization a larger, better designed working area.

The NRC staff performed a review of the proposed changes to the Clinton EP, as discussed in the enclosed safety evaluation, and has reviewed the licensee's regulatory and technical analyses in support of its proposed relocation of the Clinton EP Annex. As such, the proposed EP changes, in accordance with paragraph 50.47(b) of Part 50, "Emergency Plans," meet the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.47(b), and Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities." Based on this conclusion, the NRC staff concludes that the changes to the Clinton EP are acceptable.

Sincerely,
/RA/

Stephen P. Sands, Project Manager
Plant Licensing Branch III-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-461

Enclosure:
Safety Evaluation

cc w/encls: See next page

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Clinton Power Station, Unit 1

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO THE RELOCATION OF THE TECHNICAL SUPPORT CENTER

AMERGEN ENERGY COMPANY, LLC

CLINTON POWER STATION, UNIT 1

DOCKET NO. 50-461

1.0 INTRODUCTION

By letter to the Nuclear Regulatory Commission (NRC, the Commission) dated June 30, 2006, (Agencywide Documents Access and Management System (ADAMS) Accession Number ML061920575), as supplemented by letter dated December 19, 2006 (ADAMS Accession Number ML063530752), AmerGen Energy Company, LLC (the licensee) requested changes to the Emergency Plan (EP) for Clinton Power Station, Unit 1 (Clinton). The proposed changes would relocate the technical support center (TSC) from its current location adjacent to the main control room (MCR) to the training facility on the east side of the owner control area (OCA).

The supplement dated December 19, 2006, contained only clarifying information.

2.0 REGULATORY EVALUATION

The NRC staff finds that the licensee identified the applicable regulatory requirements. The applicable regulations and guidance that the licensee must meet for the emergency plans are as follows:

2.1 Regulations

The underlying purpose of the standards in Title 10 of the *Code of Federal Regulations* (10CFR) Section 50.47(b) is to ensure nuclear power reactor licensees have emergency response plans that provide reasonable assurance that adequate protective measures would be taken in the event of an emergency at a nuclear power reactor.

The following regulatory requirements are applicable:

Paragraph 50.47(b)(8): "Adequate emergency facilities and equipment to support the emergency response are provided and maintained."

Appendix E to 10 CFR Part 50, IV.E(8), in part: “Adequate provisions shall be made and described for emergency facilities and equipment, including:

8. A licensee onsite technical support center and a licensee near-site emergency operations facility from which effective direction can be given and effective control can be exercised during an emergency.”

2.2 Guidance

NRC Regulatory Issue Summary 2005-02 “Clarifying the Process for Making Emergency Plan Changes,” dated February 14, 2005, provides guidance to licensees making changes to their emergency plans.

- NUREG-0654/FEMA [Federal Emergency Management Agency] Rev. 1 “Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants” dated November, 1980, provides guidance to licensees in the development of emergency plans.
- NUREG-0696 “Functional Criteria for Emergency Response Facilities” dated February, 1981, provides guidance to licensees for creating and maintaining adequate emergency response facilities.
- NUREG-0737 “Clarification of TMI [Three Mile Island] Action Plan Requirements” dated November, 1980, provides additional guidance to licensees derived from TMI lessons learned.

3.0 TECHNICAL EVALUATION

Since the proposed revision to the Clinton EP was evaluated by the licensee to be a potential decrease in effectiveness, the proposed changes were submitted to the NRC for approval prior to implementation by the licensee, as required under 10 CFR 50.54(q).

This evaluation is based on revisions to the Clinton EP provided in application letter dated June 30, 2006 and supplemented by letter dated December 19, 2006.

The NRC staff has reviewed the licensee’s technical and regulatory analysis in support of the proposed EP changes.

The proposed TSC provides the Clinton Emergency Response Organization (ERO) a larger, better designed emergency response facility. More equipment is available to support the TSC ERO in the performance of their duties. More dedicated phones and networked personal computers will be made available due to this increase in working space. This new TSC will be housed in the Nuclear Training Building outside the Protected Area Boundary (PAB).

3.1 Functional Criteria

NUREG-0696 provides functional criteria for emergency response facilities. NRC staff reviewed the proposed Clinton TSC elements against the functional criteria of NUREG-0696, Section 2, “Technical Support Center” as follows:

Function:

- The proposed Clinton TSC will provide management and technical support to plant operations during emergency conditions and will relieve the reactor operators of peripheral duties and communications not directly related to reactor system manipulations. This meets the functional requirements of NUREG-0696 and is acceptable.
- The proposed Clinton TSC will be a dedicated facility and will be the emergency operating work area for designated technical, engineering and senior management personnel and other designated personnel required to provide technical support, and for a staff of NRC personnel. This meets the functional requirements of NUREG-0696 and is acceptable.
- The proposed Clinton TSC will be the primary onsite communications center for the plant during an emergency. This meets the functional requirements of NUREG-0696 and is acceptable.

The proposed Clinton TSC will have environmental and radiological information available from the Plant Process Computer (PPC) to perform the necessary functions of the Emergency Operations Facility (EOF) prior to EOF activation. This meets the functional requirements of NUREG-0696 and is acceptable.

Location:

- The proposed Clinton TSC will be located on the first floor of the Nuclear Training Building outside the PAB and within the OCA. The transit time between the proposed Clinton TSC and the MCR will be approximately 15 minutes and includes time to traverse through the PAB security barrier. NUREG-0696 recommends that a TSC be located such that the transit time from the TSC to the MCR is within 2 minutes which includes clearing any security barriers. This recommendation is based upon requiring face-to-face communications between TSC and MCR personnel to maintain effective management interaction and technical information exchange. The proposed Clinton TSC will have dedicated and diverse communications capabilities between the MCR, TSC, Operations Support Center (OSC), and the EOF. In addition, Clinton will maintain a Clinton Damage Control Hotline which is a dedicated phone ring-down circuit that connects the MCR, TSC, and OSC. ERO Communicators will staff these phones during emergency situations. Additionally, the proposed Clinton TSC will have access to the PPC data via the Plant Parameter Display System (PPDS) displays. While the transit time is greater than that recommended by NUREG-0696, the enhancements to the communications and instrumentation, as well as the enhancements based upon an increase in the physical size of the Clinton TSC, is an acceptable alternative to the functional requirements of NUREG-0696 and is acceptable.

Size:

- NUREG-0696 recommends that the TSC be sized to accommodate 25 individuals with enough space for 75 ft² per person (1875 ft²). The proposed Clinton TSC will provide a working space of approximately 3700 ft² as well as provide a separate conference room,

a document room, and two additional workrooms for ERO, State, and Federal personnel. This meets the functional requirements of NUREG-0696 and is acceptable.

Structure:

- The proposed Clinton TSC will be located in the old Clinton EOF on the first floor of the Nuclear Training Building outside the PAB and within the OCA. The TSC perimeter walls and ceiling are 8-inch thick concrete and the building in which it is located is built in accordance with the Uniform Building Code, and other applicable construction codes, and is designed to be capable of withstanding the most adverse conditions reasonably expected during the design life of the plant including adequate capabilities for earthquakes, high winds, and flood conditions. This meets the functional requirements of NUREG-0696 and is acceptable.

Habitability:

- The proposed Clinton TSC will be adequately protected from radiological hazards including direct radiation and airborne radioactivity from in-plant sources under accident conditions. The Clinton TSC has been designed to meet the protected envelope requirements similar to the MCR as identified in NUREG-0696 and NUREG-0737. This includes high efficiency particulate air and charcoal filters on the emergency makeup unit, radiation monitoring, and backup power supplies. The occupancy dose rates in the proposed Clinton TSC are the same or less than those of the MCR. Clinton performed a dose calculation and verified that the proposed Clinton TSC meets the criteria outlined in NUREG-0696, including ensuring the dose to the Clinton TSC occupants is limited to less than 5 rem [roentgen equivalent man] total effective dose equivalent for the 30-day accident mitigation period. This meets the functional requirements of NUREG-0696 and is acceptable.

Communications:

- The proposed Clinton TSC will be the primary onsite communications center for the plant during an emergency. The Clinton TSC will have reliable voice communications capability between the Clinton TSC, OSC, EOF, MCR, and the NRC. Capability for communicating with the state of Illinois and local operations centers will also be provided.
- These communications systems are provided with reliable station electric power. In the case of a power failure, the Clinton phone systems have battery backup power so they will remain operable until an emergency diesel generator can power the systems. This meets the functional requirements of NUREG-0696 and is acceptable.

Instrumentation, Data System Equipment, and Power Supplies:

- The current PPDS will continue to serve as the primary source of data for the Clinton TSC. The display is designed for monitoring key plant parameters to perform classification of an emergency based on established emergency action levels (EALs). Meteorological data is available on the PPDS for use in dose assessment modeling. This meets the functional requirements of NUREG-0696 and is acceptable.

- The primary power source is from a local 138 KV offsite distribution source to Clinton. Backup power is provided by a 500 KW diesel generator. This meets the functional requirements of NUREG-0696 and is acceptable.

Technical Data and Data System:

- The following PPDS displays are available to the Clinton TSC staff and can be displayed electronically for live-time monitoring:
 - Parameter trending
 - Plant overview
 - Plant status
 - EAL parameters
 - Radiological status
 - Effluent release parameters
 - Core damage assessment model data
 - Emergency Response Data System data

The proposed Clinton TSC has data display capabilities that will support decision making during event classification and dose assessment. This meets the functional requirements of NUREG-0696 and is acceptable.

Records Availability and Management:

- The proposed Clinton TSC will have an up-to-date repository of selected plant records and procedures available to Clinton TSC staff to aid in their technical analysis and evaluation of emergency conditions. These records will be controlled to ensure they are current and complete. Hard copies of key reference materials will be maintained throughout the Clinton TSC. Station design documents, plant drawings, UFSAR, procedures, etc., are available via Local Area Network connections from the Electronic Document Management System. This meets the functional requirements of NUREG-0696 and is acceptable.

3.0 CONCLUSION

The NRC staff performed a review of the proposed changes to the Clinton EP and has reviewed the licensee's regulatory and technical analyses in support of its proposed relocation of the Clinton EP Annex. As such, the proposed EP changes meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50. Based on this conclusion, the NRC staff concludes that the changes to the Clinton EP are acceptable.

Principal Contributor: D. Johnson, NSIR

Date: March 12, 2007