

10 CFR 50.90

RS-06-185

December 19, 2006

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-001

Clinton Power Station, Unit 1
Facility Operating License No. NPF-62
NRC Docket No. 50-461

Subject: Additional Information Supporting the Request for NRC Approval of Changes to the Clinton Power Station Emergency Plan Annex

- References:**
- (1) Letter from Patrick R. Simpson (Exelon Generation Company, LLC) to U.S. NRC, "Request for NRC Approval of Changes to the Clinton Power Station Emergency Plan Annex," dated June 30, 2006
 - (2) Letter from U.S. NRC to C. M. Crane (AmerGen Energy Company, LLC), "Clinton Power Station, Unit 1 – Request for Additional Information Related to the Emergency Plan Annex (TAC No. MD2468)," dated November 22, 2006

In Reference 1, AmerGen Energy Company, LLC (AmerGen) requested NRC approval of a proposed change to the Clinton Power Station (CPS), Unit 1, Emergency Plan (EP) Annex. Specifically, Reference 1 proposed a change to the EP Annex that relocates 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 CPS Owner Controlled Area.

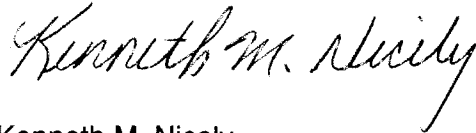
In Reference 2, the NRC requested additional information to support their review of Reference 1. Attachment 1 to this letter provides the requested information. In addition, Attachment 2 provides a copy of the revised Section 5 from the CPS EP Annex reflecting the proposed changes.

There are no regulatory commitments contained in this letter.

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If you have any questions concerning this letter, please contact Mr. Timothy A. Byam at (630) 657-2804.

Respectfully,

A handwritten signature in cursive script that reads "Kenneth M. Nicely".

Kenneth M. Nicely
Manager – Licensing

- Attachments: (1) Additional Information Supporting the Request for NRC Approval of Changes to the Clinton Power Station Emergency Plan Annex
(2) Section 5 of Revised Clinton Power Station Emergency Plan Annex

ATTACHMENT 1

Additional Information Supporting the Request for NRC Approval of Changes to the Clinton Power Station Emergency Plan Annex

Request 1

Explain how the proposed TSC is a dedicated facility as defined in NUREG-0696, "Functional Criteria for Emergency Response Facilities."

Response 1

The proposed Technical Support Center (TSC) does not have any other designated use to support normal plant operations at Clinton Power Station (CPS). The proposed TSC will be used for training of Emergency Response Organization (ERO) members and for Emergency Preparedness drills. There will not be any activities conducted in the proposed TSC that will degrade TSC preparedness to support station response to abnormal conditions or reduce the reliability of TSC systems. Therefore, the proposed TSC meets the requirements for a dedicated facility as defined in NUREG-0696.

Request 2

Will Clinton's emergency plan have the same level of detail as change #1.M in your 10 CFR 50.54(q) evaluation?

Response 2

The technology capabilities of the proposed TSC will be sufficient to implement the requirements of the Exelon Nuclear Standardized Radiological Emergency Plan and will be similar to the TSCs of other Midwest Exelon Stations. The Exelon Nuclear Standardized Radiological Emergency Plan describes the technological capabilities of change #1.M for the proposed CPS TSC in various sections.

Section I.4 states:

Dose assessment or projection represents the calculation of an accumulated dose at some time in the future if current or projected conditions continue. During an accident, the Plant Parameter Display System and personal computers will provide the ERO with the timely information required to make decisions. Radiological and meteorological instrumentation readings are used to project dose rates at predetermined distances from the station, and to determine the integrated dose received.

With regard to telephone lines, section F.1 states:

1. Communications/Notifications

Exelon Nuclear has extensive and reliable communication systems installed at its generating stations and Corporate Headquarters. Examples of the communications network include systems such as normal and dedicated telephone lines on landlines, microwave and fiber-optic voice channels, cell

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phones, satellite phones, mobile radio units, handi-talkies and computer peripherals. This network provides:

- Voice communication through normal telephone, dedicated line and automatic ring-down between selected facilities, conference call capability, speaker phones, and operator assistance where required.
- Communications between selected Exelon vehicles and appropriate fixed locations, as well as with state mobile units and fixed locations.
- Facsimile, network, and modem transmission.

Figure F-1 (attached) depicts the initial notification paths and the organizational titles from the Exelon Nuclear Emergency Response Facilities (ERFs) to federal, state and local emergency response organizations, and industry support agencies. The Exelon primary and alternate methods of communication, and the NRC communications network, are illustrated on Figures F-2 and F-3 (attached).

- a. Exelon Nuclear maintains the capability to make initial notifications to the designated offsite agencies on a 24-hour per day basis. The offsite notification system, referred to as the Nuclear Accident Reporting System (NARS) provides communications to state and county warning points and Emergency Operations Centers from the Control Room (CR), TSC, and Emergency Operations Facility (EOF). Backup methods include facsimile and commercial telephone lines. State and county warning points are continuously staffed.
- b-d. Exelon Nuclear has established several dedicated communication systems that ensure reliable and timely exchange of information necessary to provide effective Command and Control over any emergency response; (1) between Exelon and state and local agencies within the Emergency Planning Zones (EPZs), (2) with federal emergency response organizations, (3) between the plant, the EOF, and the state and county Emergency Operation Centers (EOCs), and (4) between Emergency Response Facilities and Field Monitoring Teams. A general description of the systems is as follows:
 - 1) Nuclear Accident Reporting System (NARS): The NARS is a dedicated communications system that has been installed for the purpose of notifying State and local authorities of declared nuclear emergencies. This system links together the station CR, the EOF, TSCs and State and local authorities as appropriate. The specific design, operation, and responsibility for maintenance of the NARS systems vary between Exelon Nuclear regions.
 - 2) Damage Control Line: A dedicated telephone link called the Damage Control Line that enables communication between the CR, the TSC and the Operations Support Center (OSC) to

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coordinate the dispatching of emergency damage control teams from the OSC (see Figure F-2).

- 3) Operations Status Line: A dedicated telephone link called the Operations Status Line that enables communication between the CR, the TSC and the EOF to monitor the activities of the Control Room staff (see Figure F-2).
- 4) Technical Conference Line: A dedicated telephone line called the Technical Conference Line between the TSC and the EOF to communicate mitigating activities and priorities for the station to the EOF (see Figure F-2).
- 5) Director's Hotline: A dedicated telephone link called the Director's Hotline that enables direct Emergency Director communication between the CR, TSC, and the EOF (see Figure F-2).
- 6) Private Branch Exchange (PBX) Telephone System: The PBX telephone system provides communication capability between telephones located within the plant by dialing a four-digit station code. The PBX is used to connect the CR, TSC, EOF, and OSC. The PBX telephone system also provides for outside communications through interconnections with the corporate telephone communications system and commercial telephone lines.
- 7) Local Commercial Telephone System: This system provides standard commercial telephone service through the public infrastructure, consisting of central offices and the wire line and microwave carrier. The commercial telephone system includes connections to PBX, emergency telephone system, dedicated lines to emergency facilities, and lines to the Joint Information Centers (JICs). The commercial vendor provides primary and secondary power for their lines at their central office.
- 8) Emergency Response Data System (ERDS): The ERDS will supply the NRC with selected plant data points on a near real time basis. ERDS is activated by the ERO as soon as possible but not later than one hour after declaration of an Alert, Site Area Emergency or General Emergency. The selected data points are transmitted via modem to the NRC at approximately 1-minute intervals.
- 9) Field Monitoring Team Communications: A separate communications system has been installed to allow coordinated environmental monitoring and assessment during an emergency. This system consists of the necessary hardware to allow

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communication between the CR, TSC, EOF, and mobile units in Exelon Nuclear vehicles. Commercial cell phones or other means are available as back up to the primary field team communications system.

In addition, station communication links exist to ensure appropriate information transfer capabilities during an emergency. The station may also utilize its Public Address System, station radios and pagers to augment its emergency communications.

- e. ERO Notification System: Exelon Nuclear utilizes an automated ERO Notification System to rapidly notify members of the ERO. The system consists of a computer with modem equipment capable of initiating and receiving telephone calls. When contact is made, the system automatically requests a security identification and then responds. One of the calls made by the system is to the paging system vendor. The pager vendor's system accepts group and individual numbers from the ERO Notification System, activating several radio transmitters which, in turn, activates personal pagers belonging to members of the ERO. The system is designed with redundant power, phone and computer components with geographic separation. Implementing procedures specify the course of action to be taken if the ERO Notification System fails that require station personnel to manually activate the ERO group page feature and/or directly call-out key emergency response personnel.

- f. NRC Communications (ENS and HPN)

Communications with the NRC Operations Center will be performed via the NRC Emergency Notification System (ENS) and Health Physics Network (HPN) circuits or commercial telephone line. Information is normally communicated from an approved NRC Event Notification Worksheet prior to establishing an open ENS and/or HPN line. The actual configuration of these systems may vary from station to station. Installation and use of these NRC telephones is under the direction of the NRC (see Figure F-3).

Emergency Notification System (ENS): Dedicated telephone equipment is in place between each nuclear station's Control Room and the NRC, with an extension of that line in the TSC. A separate line is available in the EOF with the capability of being patched with the station through the NRC. This line is used for NRC event notifications and status updates.

Health Physics Network (HPN): There also exists a separate dedicated telephone between the NRC, the TSC, and EOF for conveying health physics information to the NRC as requested or as an open line.

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In conclusion, the Exelon Nuclear Standardized Radiological Emergency Plan provides sufficient detail on the required technological capabilities of the TSCs located at the Exelon Generation Company, LLC (EGC) stations. Therefore, additional detail consistent with that provided in the 10 CFR 50.54, "Conditions of licenses," paragraph (q) evaluation is not necessary to meet the emergency plan requirements. This additional detail in change #1.M is provided simply to support the evaluation in accordance with the requirements of 10 CFR 50.54(q).

Request 3

Explain any compensatory measures available to minimize the transit time or security processing time from the proposed TSC to the control room?

Response 3

The Station Emergency Director's checklist provides guidance for TSC evacuation. This checklist provides guidance to consider onsite locations or the TSC of another Exelon facility, if necessary. The checklist also provides guidance to brief the ERO members on special precautions and radiological hazards associated with the relocation. The checklist provides guidance that the TSC Director will coordinate the TSC evacuation. It is through the implementation of this guidance that the necessary coordination will take place to ensure a smooth transit to the designated relocation facility.

Request 4

Does the proposed TSC have the same radiological habitability protection as the control room? How was this verified?

Response 4

The TSC personnel are adequately protected from radiological hazards including direct radiation and airborne radioactivity from in-plant sources under accident conditions. The TSC has been established to meet the protected envelope requirements similar to the CR as identified in NUREG-0696 and NUREG-0737, "Clarification of TMI Action Plan Requirements." This includes high efficiency particulate air (HEPA) and charcoal filters on the emergency makeup unit, radiation monitoring, and backup power supply. Therefore, occupancy dose rates in the TSC are the same or less than those of the Control Room.

The following is the description of the new TSC heating, ventilation, and air-conditioning (HVAC) system.

1. The system is design for 8500 cfm capacity with 5500 cfm recirculation and 3000 cfm make-up air. Normally the make-up unit is bypassed.
2. The 3000 cfm make-up air is adequate to keep the TSC area at a positive pressure with respect to the adjacent area.

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3. Upon radiation release from the plant, the 3000 cfm makeup air fan is started and make-up air is routed through the HEPA and charcoal filter unit. This air is combined with 5500 cfm unfiltered recirculation air and supplied to the TSC. The make-up filter unit is designed such that the post accident integrated dose to personnel in the TSC, including shine from external sources, is less than the requirements specified in NRC General Design Criterion 19.
4. NUREG-0696 does not require system redundancy and hence, the system is not designed with redundancy. The TSC HVAC system is non-safety related, however, back up power is provided to run the TSC HVAC on a diesel generator. The duct, duct accessories, filter units, charcoal and HEPA filters are commercial grade and meet uniform building codes as described in NUREG-0696. The charcoal trays are manufactured to provide 2-inch thick charcoal with minimum residence time of 0.25 seconds.
5. Specific testing requirements are not identified in NUREG-0696. Therefore, no specific HEPA/charcoal filter, duct, and duct accessory testing was performed. However, testing was performed to ensure the TSC HVAC system can maintain positive pressure with respect to the adjacent area with the 3000 cfm make-up air.
6. The TSC is provided with permanently installed area radiation monitors.

Request 5

Explain what the H.1.b requirements are for Clinton.

Response 5

The section H of the Exelon Nuclear Standardized Radiological Emergency Plan provides details of the onsite and offsite facilities for emergency assessment, communications, first aid and medical care, and damage control. This section describes the emergency facilities and equipment used by the ERO and outlines the requirements which aid in timely and accurate response actions. It also describes the surveillance programs used to monitor and ensure that these facilities and equipment are maintained in a high degree of constant readiness.

Section H.1.b specifically describes the TSC and the details are provided below.

Each nuclear generating station has established a TSC for use during emergency situations by station management, technical, and engineering support personnel. The TSC is activated for all emergencies classified as Alert or higher. Activation for other events is optional. When activated the TSC functions include:

- Support for the Control Room's emergency response efforts.
- Performance of the non-delegable functions when in Command and Control.
- Continued evaluation of event classification.
- Assessment of the plant status and potential offsite impact.
- Coordination of emergency response actions.
- Notification of appropriate corporate and station management.

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- Notification and update of the NRC via Emergency Notification System (ENS) including activation of Emergency Response Data System (ERDS).

The TSC is the onsite location utilized to support the Control Room for assessment of plant status and potential offsite impact, and for implementation of emergency actions. TSC provides technical data and information to the EOF.

The Exelon Nuclear Standardized Radiological Emergency Plan illustrates the staffing and organization of the TSC.

Each TSC provides reliable voice communications to the Control Room, the OSC, the EOF, the NRC, and state and local Emergency Operations Centers. In addition, they provide facsimile transmissions capability.

Each TSC is sized to accommodate a minimum of 25 spaces and supporting equipment. This includes provisions for five NRC representatives. Adequate space is also available for the appropriate state representative(s).

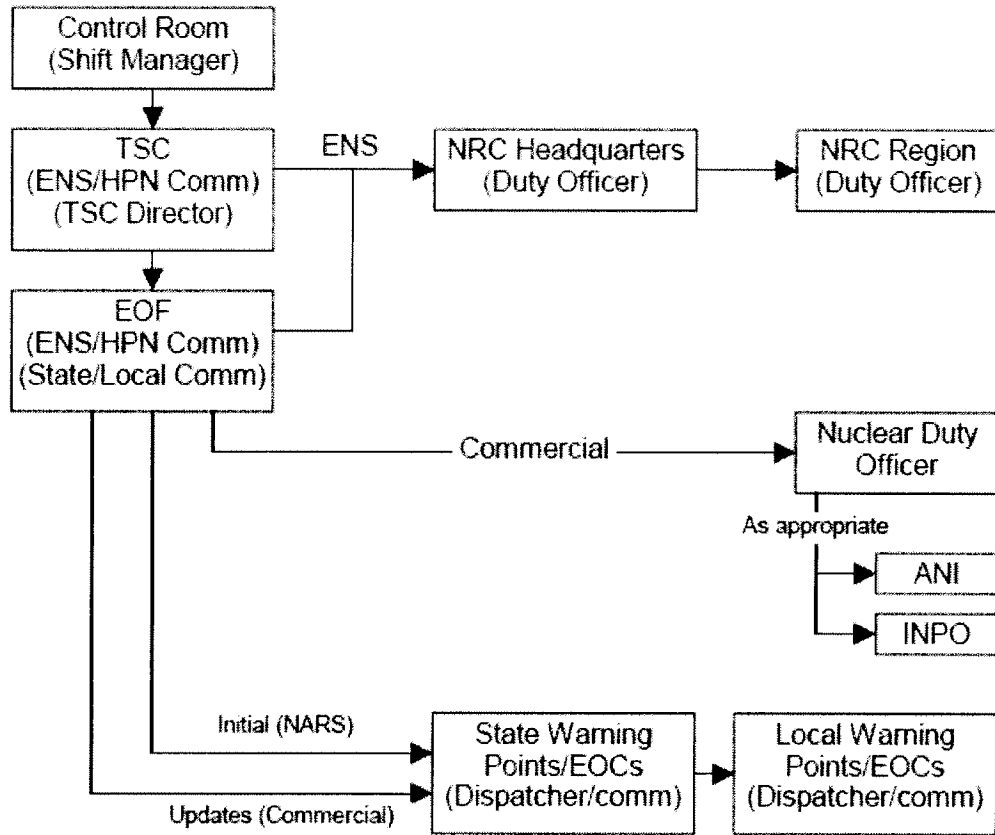
Personnel in the TSC shall be protected from radiological hazards, including direct radiation and airborne contaminants under accident conditions with similar radiological habitability as Control Room personnel. To ensure adequate radiological protection, permanent radiation monitoring systems have been installed in the TSC and/or periodic radiation surveys are conducted. These systems indicate radiation dose rates and airborne radioactivity inside the TSC while in use. In addition, protective breathing apparatus (full-face air purifying respirators) and potassium iodide (KI) are available for use as required.

The TSC has access to a complete set of as-built drawings and other records, including general arrangement diagrams, piping and instrument drawings, and the electrical schematics. The TSC has the capability to record and display vital plant data, in real time, to be used by knowledgeable individuals responsible for engineering and management support of reactor operations, and for implementation of emergency procedures.

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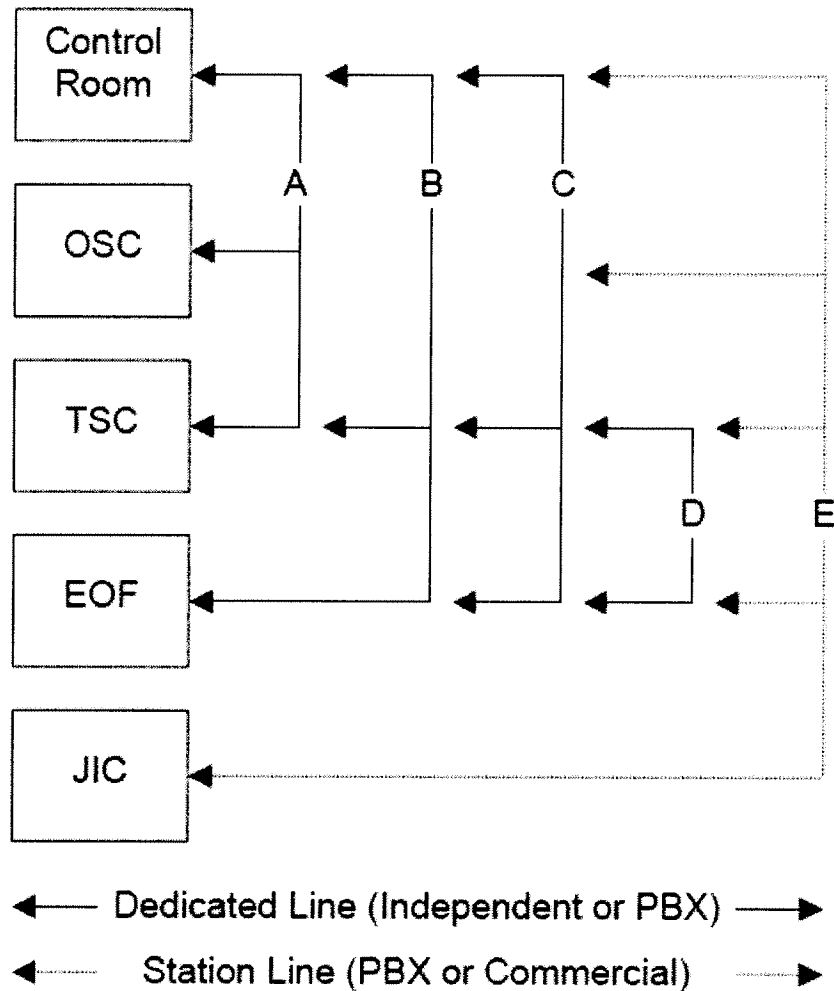
Figure F-1: Exelon Notification Scheme (For Full Augmentation)



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Figure F-2: ERF Communications Matrix



A = Damage Control Line between the OSC, TSC, and Control Room.

B = Directors Hotline line between the Control Room, TSC and EOF.

C = Operations Line between the TSC, Control Room and EOF.

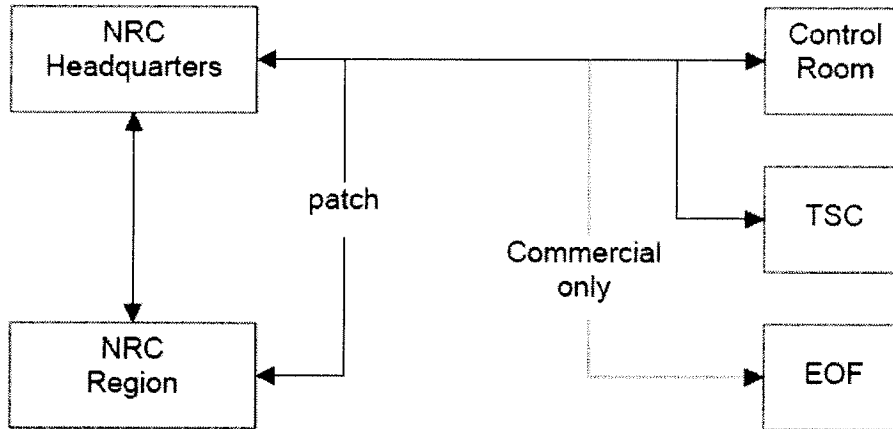
D = Technical Conference Line between the TSC and EOF.

E = Station telephone line.

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Figure F-3: NRC Communications for Nuclear Response



NOTE: ENS and HPN circuits may use the Federally maintained system, company tie lines or PBX as dedicated primary communications systems and have commercial backups.

ATTACHMENT 2

**Section 5 of Revised Clinton Power Station
Emergency Plan Annex**

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Section 5 of Revised Clinton Power Station Emergency Plan Annex

Section 5: Emergency Facilities and Equipment

5.1 Emergency Response Facilities

5.1.1 Station Main Control Room

The Main Control Room is the initial onsite center of emergency control and is located on the 800 foot elevation of the Control Building.

5.1.2 Technical Support Center (TSC)

Clinton Station has a designated TSC on the first floor of the Nuclear Training Building on the east side of the site. Standard air sampling equipment is used to monitor air-borne radioactivity levels in the TSC. The TSC fully meets the requirements of Section H.1.b of the Emergency Plan.

5.1.3 Operational Support Center (OSC)

A designated Operational Support Center (OSC) is located in the Outage Control Center (OCC) in the Service Building. The OSC conforms to the requirements of Section H.1.c of the Exelon Nuclear Radiological Emergency Plan and is the location which operations support personnel will report during an emergency and from which they will be dispatched for assignments in support of emergency operations.

In the event that the OSC has to be abandoned, OSC personnel and functions shall be relocated to the Machine Shop on the 737' elevation of the Radwaste Building.

5.1.4 Joint Information Center (JIC)

The Joint Information Center (JIC) is the facility in which media personnel gather to receive information related to the emergency event. The JIC is located West of Chicago at the Exelon Nuclear Cantera Offices, in Warrenville, IL.