

NS 106176

~~SAFEGUARDS INFORMATION~~



UNITED STATES
NUCLEAR REGULATORY COMMISSION

Region III
2443 Warrenville Road, Suite 210
Lisle, Illinois 60532-4352

October 18, 2006

Mr. Christopher M. Crane
President and Chief Nuclear Officer
Exelon Nuclear
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: CLINTON POWER STATION, UNIT 1 - NRC INSPECTION REPORT
05000461/2006006

Dear Mr. Crane:

On September 11, 2006, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Clinton Power Station, Unit 1. The enclosed inspection report documents the inspection results, which were discussed on September 14, 2006, with Mr. B. Hanson and other members of your staff.

The inspection examined activities conducted under your license as they relate to security and compliance with the Commission's rules and regulations and with the conditions of your license. The inspector reviewed selected procedures and records, observed activities, and interviewed personnel.

No findings of significance were identified.

In accordance with 10 CFR 2.390 and the NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system, ADAMS, which is accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room). However, because of the security-related concerns contained in the enclosure, and in accordance with 10 CFR 2.390, a copy of this letter's enclosure will not be available for public inspection.

Enclosure Contains Safeguards Information. When Separated from enclosure, this cover document is DECONTROLLED.

Safeguards information determination made by:
Name/Title Barry C. Westreich, Chief
Organization NSR/DNS/SOS
Basis 2/25/02 NRC Order
Signature /RA/

~~SAFEGUARDS INFORMATION~~

D/5

SAFEGUARDS INFORMATION

C. Crane

-2-

In accordance with 10 CFR 2.390(b)(1)(ii), the NRC is waiving the affidavit requirements for your response, if any. This practice will ensure that your response will not be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system, ADAMS. If Safeguards Information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

Sincerely,



Mark A. Ring, Chief
Reactor Projects Branch 1
Division of Reactor Projects

Docket No. 50-461
License No. NPF-62

Enclosure: NRC Inspection Report 05000461/2006006 (**SAFEGUARDS INFORMATION**)

cc w/enc: w/SAFEGUARDS INFORMATION:
C. Williamson, Clinton Site Security Manager
State Liaison Officer, State of Illinois

~~Enclosure Contains Safeguards
Information. When Separated from
enclosure, this cover document is
DECONTROLLED.~~

SAFEGUARDS INFORMATION

~~SAFEGUARDS INFORMATION~~

C. Crane

-2-

In accordance with 10 CFR 2.390(b)(1)(ii), the NRC is waiving the affidavit requirements for your response, if any. This practice will ensure that your response will not be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system, ADAMS. If Safeguards Information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

Sincerely,

/RA/

Mark A. Ring, Chief
Reactor Projects Branch 1
Division of Reactor Projects

Docket No. 50-461
License No. NPF-62

Enclosure: NRC Inspection Report 05000461/2006006 (**SAFEGUARDS INFORMATION**)

cc w/encl; w/SAFEGUARDS INFORMATION:

C. Williamson, Clinton Site Security Manager
State Liaison Officer, State of Illinois

~~Enclosure Contains Safeguards
Information. When Separated from
enclosure, this cover document is
DECONTROLLED.~~

~~SAFEGUARDS INFORMATION~~

~~SAFEGUARDS INFORMATION~~
U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No. 50-461
License No. NPF-62
Report No. 05000461/2006006
Licensee: AmerGen Energy, LLC
Facility: Clinton Power Station, Unit 1
Location: Clinton, IL
Dates: September 06, 2006, through September 11, 2006
Inspector: D. Tharp, Resident Inspector
Approved by: Mark A. Ring, Chief
Reactor Projects Branch 1
Division of Reactor Projects

~~WARNING: Violation of Section 147,
"Safeguards Information," of the
Atomic Energy Act is subject to civil
and criminal penalties.~~

~~Safeguards information determination
made by:
Name/Title Barry C. Westreich, Chief
Organization NSIR/DNS/SOS
Basis 2/25/02 NRC Order
Signature /RA/
Date 5/12/06~~

~~SAFEGUARDS INFORMATION~~

Enclosure

SUMMARY OF FINDINGS

~~(SRI)~~ IR 05000461/2006006; 09/06/06 - 09/11/06; Clinton Power Station, Unit 1; Temporary Instruction 2515/168.

The NRC inspector performed a review in accordance with Temporary Instruction (TI) 2515/168 to provide information that would be used by the NRC to: (1) verify that nuclear power plant licensees are effectively implementing the interim compensatory measures (ICMs) imposed by the U.S. Nuclear Regulatory Commission (NRC) in Section B.5.b of the Order issued on February 25, 2002; (2) verify that the expectations in the February 25, 2005, Guidance Document have been evaluated and have been successfully incorporated into the licensees' site strategies; (3) ensure that relevant procedures have been developed and implemented accordingly; and (4) confirm that interface agreements with offsite organizations, when required, have been developed and effectively coordinated.

The assessment is based on a review of the information that was submitted by the licensee in response to the Unresolved Item 05000461/2005010-1; documented in inspection report no. 05000461/2005010. The results of this review were presented to an NRC panel that made a determination on whether the licensee had met the criteria for each of the open elements documented in the unresolved item. Based on the information available to the NRC staff, the site did not meet the NRC acceptance criteria for several elements. The attached Inspection Report Response Reviews identify the expectations for each of the elements which the staff considered open. In some cases, the staff concluded that based upon the information provided by the licensee in their response to the URI, no further inspection effort was warranted and the element was considered closed.

The elements contained in the Summary of Results Table in the Attachment to this inspection report, which were considered collectively as URI 05000461/2005010-1, have been resolved and are closed.

REPORT DETAILS

a. Inspection Scope

On February 25, 2002, the NRC staff issued an Order modifying the current operating licenses of all 104 operating commercial nuclear power plants to require compliance with interim safeguards and security compensatory measures. In this Order, the NRC required in Section B.5.b, Mitigative Measures, that licensees develop specific guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities using existing or readily available resources (equipment and personnel) that can be effectively implemented under the circumstances associated with loss of large areas of the plant due to large fires and explosions. Inspections of the implementation of the B.5.b requirements were conducted in 2002 and 2003 (TI 2515/148). These inspections identified large variability in the scope and depth of the enhancements made by licensees, and as a result, the NRC determined that additional guidance and clarification for nuclear power plant licensees was needed.

The NRC staff developed guidance for use in a program of reviews and inspections of nuclear power plant licensees that were used for the B.5.b inspections previously performed. The Guidance Document, which was transmitted to licensees on February 25, 2005, for use in further enhancing site-specific implementation of the Section B.5.b requirements, included lessons learned from engineering studies involving plant assessments as well as industry best practices identified during the inspections conducted in 2002 and 2003. The February 25, 2005, letter requested that licensees provide the NRC with a detailed response of their site-specific plans and schedules to address the expectations in the Guidance Document by May 31, 2005. Additionally, licensees were informed of the NRC's expectations that their planned mitigating strategies described in their response would be implemented no later than August 31, 2005.

NRC inspections were completed using TI 2515/164, "Inspection of Nuclear Reactor Safeguards Interim Compensatory Measures - Section B.5.b, Plant Mitigating Strategies to Address Loss of Large Areas of the Plant Due to Explosions or Fire."

Subsequent to the completion of TI 2515/164, the licensee was sent an inspection report that identified a number of elements where expectations did not meet the established acceptance criteria. These open elements were collectively considered an unresolved item in the inspection report and a written response was requested to address the identified issues. Prior to receipt of the inspection report response, NRC staff met, or held secure telephone discussions with the licensee's personnel to discuss each of the open elements and obtained verbal commitments for actions to close the identified issues. The licensee submitted a letter detailing its actions to address the open elements.

SAFEGUARDS INFORMATION

-4-

The information submitted by the licensee was presented to an NRC panel that made a determination that the licensee had met the criteria for each of the open elements documented in the unresolved item. The attached Inspection Report Response Review documents the NRC panel's conclusion that the acceptance criteria for the elements have been met, and incorporates direction for inspection follow-up to provide confirmatory information supporting the closure of the element. In some cases, the staff concluded that based upon the information provided by the licensee in their response to the subject inspection report, no further inspection effort was warranted and the element was considered closed.

The staff evaluated the licensee's mitigative strategies in the following three areas:

1. Fire Fighting Response Strategy

A key element needed to achieve a successful strategy for responding to the fire-fighting challenges involved implementing a well planned response. Accomplishing this response required: (1) the development of pre-defined coordinated fire response strategy and guidance; (2) the assessment of mutual aid fire fighting assets that could be made available to augment existing plant and local resources; (3) considerations for the establishment of a staging area for pre-positioned equipment and materials at appropriate locations that would not be expected to be affected by the event itself but would be readily available for use within the needed response time-line; (4) consideration of command and control issues associated with a large fire event; and (5) training necessary to ensure an effective response by station and offsite personnel.

Information regarding the assessment of measures within this area of consideration, including specific inspection guidance and inspector's comments that were part of the assessment process, is provided in the attached Inspection Report Response Review Interim Compensatory Measure - Section B.5.b Phase 1 Assessment Results. In addition, licensee management verbal responses, licensee written responses, NRC panel evaluations, and inspector's findings are included.

2. Plant Operations to Mitigate Fuel Damage

A mitigation strategy for preventing fuel damage as part of combating the envisioned event will require consideration of a number of elements detailed in the attached table. Inspections in this area included careful attention to ensure that the establishment of strategies and measures that employ these considerations do not detract from the safety of the plant as established for all other conditions of operations.

Information regarding the assessment of measures within this area of consideration, including specific inspection guidance and inspector's comments that were part of the assessment process, is provided in the attached Inspection Report Response Review Interim Compensatory Measure - Section B.5.b Phase 1 Assessment Results. In addition, licensee management verbal responses, licensee written responses, NRC panel evaluations, and inspector's findings are included.

SAFEGUARDS INFORMATION

3. Action to Minimize Releases

Events involving the loss of large areas of the plant due to explosions or fires can potentially result in the release of radioactive materials, warranting the consideration of mitigative measures to reduce the release and subsequent offsite consequences.

Information regarding the assessment of measures within this area of consideration, including specific inspection guidance and inspector's comments that were part of the assessment process, is provided in the attached Inspection Report Response Review Interim Compensatory Measure - Section B.5.b Phase 1 Assessment Results. In addition, licensee management verbal responses, licensee written responses, NRC panel evaluations, and inspector's findings are included.

b. Assessment and Observations

Based on the information available to the NRC staff, the staff concluded that the site meets NRC acceptance criteria for all elements, and the open elements which were collectively considered as Unresolved Item 05000461/2005010-1, B.5.b Phase 1 Assessment Measures Requiring Additional Information, are closed.

Attachment: As stated

~~SAFEGUARDS INFORMATION~~

ATTACHMENT

INSPECTION REPORT RESPONSE REVIEW

INTERIM COMPENSATORY MEASURE—SECTION B.5.b
PHASE I ASSESSMENT RESULTS

FOR

Clinton

Inspection Report: 05000461/2005010
Meeting with Licensee: 01/25/2006
License Response: 02/23/2006, 05/03/2006
Prepanel Date: 03/06/2006
Panel Date: 03/22/2006
Inspection Ready Date: 07/01/2006

<p>Warning: Violation of section 147 of the Atomic Energy Act and 10 CFR 73.21 is subject to civil and criminal penalties</p>	<p>SAFEGUARDS INFORMATION DETERMINATION MADE BY: NAME/TITLE: <u>Barry Westreich</u> ORGANIZATION: <u>NSIR</u> BASIS: <u>05/12/06</u> SIGNATURE: <u>/RAJ</u> DATE: <u>05/12/06</u></p>
--	---

SAFEGUARDS INFORMATION

A-2

B.5.b Inspection Report Response Review for Clinton

Summary of Results

Ex 3

SAFEGUARDS INFORMATION

A-3

B.5.b Inspection Report Response Review for Clinton

Verbal Commitment

Will move a set of equipment to another area (not known at this time) outside of the target area and will include in the surveillance program.

Licensee Response

Licensee will establish a staging area with pre-positioned firefighting equipment at least [] from the target area.

NRC Evaluation

Commitment was consistent with verbal agreement.

Inspection Followup

Inspector to confirm that equipment is moved to a location [] from the power block, verify that the equipment is included in a preventive maintenance/inventory program, and review the procedure to ensure that it has been modified to reflect this change.

Inspection Results

The inspector verified that a full set of fire fighting gear and other equipment necessary for a response to a fire had been move to a new fire brigade staging and storage area in the [] which was greater than [] from the target area. This equipment was listed on the [] and was inventoried quarterly by the station fire marshal. This activity was driven by the quarterly preventative maintenance item in the station's work management system.

~~SAFEGUARDS INFORMATION~~

A-4

B.5.b Inspection Report Response Review for Clinton

Verbal Commitment

Will make imminent threat procedure changes to disperse outside of the target area on an airborne threat.

Licensee Response

Licensee will revise procedure to disperse the fire brigade outside of the target area on an airborne threat.

NRC Evaluation

Commitment was consistent with verbal agreement.

Inspection Followup

Confirm that procedures disperse fire brigade outside of the target area on an

Inspection Results

Ex
B

Ex
B

Ex
B

SAFEGUARDS INFORMATION

A-5

B.5.b Inspection Report Response Review for Clinton

Verbal Commitment

Licensee will communicate with facilities with airlift capability within a [] response time and document efforts to make agreements with these facilities, and document the resources that can be brought in. Ex 3

Licensee Response

Licensee will communicate with facilities with airlift capability within a [] response time, will document efforts to make agreements with these facilities, and will document the resources that can be brought in. Ex 3

NRC Evaluation

Commitment was consistent with verbal agreement.

Inspection Followup

Inspector to confirm that the licensee has evaluated the availability of airlifted resources and has documented these resources, if any, in its mitigation strategy documents.

Inspection Results

The licensee contacted twelve airports in Central Illinois, to assess the types and availability of fire fighting equipment and response resources available at each. Bloomington, Champaign, and Decatur each responded that they had significant resources, but no airlift resources/capability on site. However, the resources listed would be made available to the Clinton power station site through a Mutual aid box and alarm system (MABAS) response with less than a two hour drive time. The details of airports contacted and the equipment available at each, were documented in action report 455060, assignment 4. No further procedural changes were made because the initial MABAS activation by the Clinton fire chief, (as directed by OP-CL-106-101-2001, Clinton Power Station Emergency management guideline) will make all of these resources available as determined necessary.

SAFEGUARDS INFORMATION

A-6

B.5.b Inspection Report Response Review for Clinton

49
E 3
dosimetry devices were available at Dosimetry Center near plant entrance. Because this location was not sufficiently far from the target areas, it may not be available following a B.5.b event.

Verbal Commitment

Currently store the TLDs within the target area. Will determine appropriate number and store outside of the target area.

Licensee Response

Will determine the quantity of dosimetry needed for first responders and modify procedure to ensure that this dosimetry will be available outside of the target area and provided to individual first responders.

NRC Evaluation

Commitment was consistent with verbal agreement.

Inspection Followup

Ensure that appropriate quantities of dosimetry have been provided approximately outside of the target area and that procedures have been modified to incorporate this strategy. Ex 3

Inspection Results

The licensee determined _____ dosimeters was the appropriate quantity to maintain for outside responders. The licensee maintained _____ in the _____ in a rapid response bag in the new _____ in the _____ The _____ was located greater than _____ outside the target area, and these dosimeters were tracked and _____ inventoried under the same quarterly checklist. Ex 3

_____ as the fire fighting equipment. The Clinton Power Station Emergency management guideline, OP-CL-106-101-2001 directed the issuance of these dosimeters, and identified the above location for storage.

SAFEGUARDS INFORMATION

A-7

B.5.b Inspection Report Response Review for Clinton

Ex 3

Verbal Commitment

Will revise procedure to ensure that they will be available for the response.

Licensee Response

Will determine appropriate number of [redacted] for firefighting response and stage this equipment outside of the target area. Ongoing maintenance of this equipment will be implemented.

NRC Evaluation

Commitment was consistent with verbal agreement.

Inspection Followup

Inspector to verify that the licensee has evaluated a minimum number of radios to support the expected number of offsite responders, and confirm that the number of radios staged is consistent with the evaluation. The [redacted] should be staged at a location outside of the damage footprint (approximately [redacted] from the target area). Ex 3

Inspection Results

The required number of radios for off-site response had been evaluated and documented by the licensee in [redacted]. The licensee determined that [redacted]

[redacted] would be needed for off-site fire department response. These [redacted] with [redacted] accompanying batteries and chargers, were staged at the [redacted] which was greater than [redacted] from the target area. This equipment was tracked and maintained by the quarterly audit of the [redacted] performed under [redacted] and driven by the station's work management preventive maintenance program. Ex 3

SAFEGUARDS INFORMATION

A-8

B.5.b Inspection Report Response Review for Clinton

Verbal Commitment

Will revise corporate procedure to include a triage area with a note that the Emergency Director may designate a different location.

Licensee Response

Licensee will revise the corporate procedure to include a triage area with a note that the emergency director may designate a different location.

NRC Evaluation

Commitment was consistent with verbal agreement.

Inspection Followup

Inspector to confirm that proposed triage location(s) are appropriate (i.e., located greater than [redacted] from the target areas), are included in site procedures/guidance documents, and are of sufficient size to support [redacted] (i.e., a warehouse, open area, or building with large rooms for accommodating triage). Licensee mitigation strategy documents may note that the Incident Commander has the authority to determine the triage location at the time of the event.

Inspection Results

Exelon procedure [redacted] designated the [redacted] as the triage area. The [redacted] was greater than [redacted] from the target areas and had several large rooms capable of supporting [redacted]. The procedure also included a note that stated "the emergency director may designate an alternate triage area location based on the [area] affected by the event."

B.5.b Inspection Report Response Review for Clinton

Ex 3
Verbal Commitment

Table top drill has been performed with offsite responders. Will provide information to the staff.

Licensee Response

Licensee will provide documentation of tabletop exercises with offsite responders that have been conducted, and plan additional tabletop exercises with offsite responders as needed.

NRC Evaluation

Commitment was consistent with verbal agreement.

Inspection Followup

Inspector to review documentation to verify that a B.5.b tabletop exercise has been conducted with offsite responders.

Inspection Results

The Clinton Power Station fire marshal completed table top exercises/scenario training at the on-site fire training facility for both the Kinney and Clinton fire departments on June 21 and June 29, 2005, respectively. These training sessions included a power point presentation describing a history of events and the need to be prepared for a B.5.b type event. The power point also included exercises in calculating quantities as described by NFPA, and fire fighter instructions for applications. Other training activities with these departments included plant vital area tours and a water shuttle operation demonstration. Five members of the Clinton fire department and three from Kinney were present at the training sessions. The station fire marshal was taking this same power point presentation to the fire department meetings to provide continuing training, and included more members of each department, in September and October 2006. Ex 3

SAFEGUARDS INFORMATION

A-10

B.5.b Inspection Report Response Review for Clinton

Ex 3

- No specific dispersal staging areas were identified for operations and supporting personnel. Licensee determined staging area during the event.

Verbal Commitment

Will revise procedure to disperse
imminent threat.

outside of the target area on a probable and

Ex 3

Licensee Response

Licensee will revise appropriate procedure(s) to disperse
area for a probable or imminent airborne threat.

outside of the target

Ex 3

NRC Evaluation

Commitment was consistent with verbal agreement.

Inspection Followup

Inspector to confirm that procedures disperse

to a location approximately

outside

Ex 3

Ex 3

Ex 3

of the power block on an

Inspection Results

contained a step to
that stated,

with a note in italics

Ex 3

Ex 3

as determined by the shift manager.

locations would be given

Ex 3

Ex 3

SAFEGUARDS INFORMATION

A-11

B.5.b Inspection Report Response Review for Clinton

Verbal Commitment

Will determine number of [] needed for operational recovery teams and stage in a location outside of the damage footprint.

Licensee Response

Will determine appropriate number of [] needed for operational recovery teams and stage this equipment outside of the target area. Ongoing maintenance of this equipment will be implemented.

NRC Evaluation

Commitment was consistent with verbal agreement.

Inspection Followup

Inspector to confirm that the licensee has evaluated a minimum number of radios to facilitate communications for the recovery teams, and confirm that the number of radios staged is consistent with the evaluation. The [] should be staged at a location outside of the damage footprint (approximately [] from the target area). These radios should be different from those staged for the fire fighters.

Inspection Results

The licensee determined that [] would be needed for communications of operations recovery teams. This determination was documented in [] These [] along with [] were staged in the [] in the [] which was greater than [] from the target area. The licensee determined the total number of []

SAFEGUARDS INFORMATION

A-12

B.5.b Inspection Report Response Review for Clinton

EL 3

Verbal Commitment

Will develop a procedure to perform [] if circumstances allow.

EL 3

Licensee response

Licensee will develop a procedure to perform [] if the circumstances allow.

EL 3

NRC Evaluation

Commitment was consistent with verbal agreement.

Inspection Followup

Inspector to confirm that licensee has developed a procedure to []

EL 3

Inspection Results

EL 3

~~SAFEGUARDS INFORMATION~~

A-13

B.5.b Inspection Report Response Review for Clinton

ELB

Verbal Commitment

Will perform a walkdown and communicate results.

Licensee Response

Licensee will perform a walkdown for potential compartmentalization enhancements and will document the results.

NRC Evaluation

Commitment was consistent with verbal agreement.

Inspection Followup

Inspector to confirm that a walkdown was conducted and that enhancements, if identified, have been addressed.

Inspection Results

ELB

~~SAFEGUARDS INFORMATION~~

A-14

B.5.b Inspection Report Response Review for Clinton

Verbal Commitment

Licensee would like to defer this issue while it is addressed generically through NEI.

Licensee concern: Use of critical path time during outages considering that the outage group is shared among sites. Outages in the near future have been pre-planned and it would be difficult to implement this change this year.

Licensee Response

The licensee provided a commitment in its letter of May 3, 2006 in response to the NRC issuing additional guidance (Letter from J.E. Dyer to NEI dated March 16, 2006): Where feasible and practical, consistent with safe fuel handling practices, Exelon/AmerGen will make every attempt to

NRC Evaluation

Commitment was consistent with the language proposed by NEI and agreed to in NRC's March 16, 2006, letter.

Inspection Followup

Inspector to confirm that procedures related to refueling have been revised to be generally consistent with the licensee's commitment.

~~SAFEGUARDS INFORMATION~~

Ex
3

Ex. B

Ex. B

SAFEGUARDS INFORMATION

A-15

B.5.b Inspection Report Response Review for Clinton

Inspection Results

The inspector reviewed licensee procedure

Step

contained language consistent with that described above, in the licensee response section.

63

B.5.b Inspection Report Response Review for Clinton

- Only operations personnel were trained.

Verbal Commitment

Will provide training to emergency response organization (ERO) staff.

Licensee Response

Licensee will provide training on new strategies to ERO personnel, including decision makers, table heads, and group leads. Appropriate portions of this training will be incorporated into routine training schedules. Additionally, the licensee will revise the ERO training program to incorporate ongoing B.5.b event training for applicable ERO members.

NRC Evaluation

Licensee has committed to revise the ERO training program.

Inspection Followup

Inspector to verify that training on B.5.b strategies has been provided to ERO personnel and that ERO training program has been revised to incorporate B.5.b training for appropriate ERO positions.

Inspection Results

Training on B.5.b event response by ERO personnel was completed on May 1 and 24, 2006. Action tracking items have been established or tracking B.5.b training in 2007, and for revising training documents to describe B.5.b training requirements at Clinton Power Station. The Exelon corporate procedure for ERO training is currently under revision. The draft version of Revision 8b included tables that show requirements for B.5.b training, initial and continuing, for selected ERO positions.