

MD 8.3 Evaluation
Decision Documentation for Reactive Inspection
(Deterministic and Risk Criteria Analyzed)

PLANT: Clinton	EVENT DATE: 11/14/2025	DETERMINISTIC CRITERIA EVALUATION DATE: 11/20/2025
---------------------------------	---	---

Brief Description of the Significant Operational Event or Degraded Condition:

On Sunday, 11/9/2025, the licensee declared the B Reserve Auxiliary Transformer (RAT) inoperable for planned maintenance window scheduled to end on 11/16/2025. During this period, the emergency reserve auxiliary transformer (ERAT) was providing offsite power to the 4 kV safety-related vital buses (1A1, 1B1 and 1C1) and the site had implemented a risk-informed completion time (RICT) of 30 days.

On 11/14/2025, the site was completing maintenance on the B RAT in preparation for its return to service. At 1351 CT, a contract worker entered the components for the ERAT and was fatally electrocuted after contacting energized equipment. This also caused a loss of the ERAT, resulting in a loss of offsite power to the 4kV vital buses. All 3 emergency diesel generators (EDGs) started as designed and supplied power to these buses. Offsite emergency services were called by the licensee to respond to the site (fire and ambulance responded, although there was no fire). Per the NRC's emergency action levels, the licensee declared a Notice of Unusual Event under MU1, for the loss of offsite power for greater than 15 minutes.

During this event, the reactor remained stable at 99% power and power was available to the non-essential buses via the main power transformer and unit auxiliary transformer. There were no observed significant unexpected equipment issues and no concerns identified with operator performance.

Following the licensee's restoration activities, the B RAT and ERAT were returned to available status, and the Unusual Event was exited by 0500 CT on 11/16/2025. Offsite power was subsequently restored to all the safety-related 4kV vital buses, ERAT and B RAT were declared operable, the EDGs were returned to a standby condition, and the RICT was exited at approximately 1615.

Y/N	DETERMINISTIC CRITERIA
N	1. Involved operations that exceeded, or were not included in, the design bases of the facility Remarks: A loss of offsite power event is part of the analyzed design basis.
N	2. Involved a major deficiency in design, construction, or operation having potential generic safety implications Remarks: None identified to date.
N	3. Led to a significant loss of integrity of the fuel, primary coolant pressure boundary, or primary containment boundary of a nuclear reactor

	Remarks: None was identified.
Y	4. Led to the loss of a safety function or multiple failures in systems used to mitigate an actual event
	Remarks: The event resulted in a loss of offsite power to the 4kV vital buses from 1351 CT 11/14/2025 until 0547 CT 11/16/2025; during this period, the vital buses were powered by the EDGs. Offsite power to the non-essential buses remained available.
N	5. Involved possible adverse generic implications
	Remarks: None identified.
N	6. Involved significant unexpected system interactions
	Remarks: None identified.
N	7. Involved repetitive failures or events involving safety-related equipment or deficiencies in operations
	Remarks: There were no observed unexpected equipment issues and no concerns identified with operator performance during the event.
N	8. Involved questions or concerns pertaining to licensee operational performance
	Remarks: While it is not yet understood why the individual accessed the component, to date, there were no observed deficiencies in the licensee's posting of equipment or control of the work area during the maintenance.
	If new information is later identified through inspection that raises questions or concerns pertaining to licensee operational performance, this evaluation will be revisited and reevaluated.

CONDITIONAL RISK ASSESSMENT	
RISK ANALYSIS BY: Lionel Rodriguez	DATE: 11/21/2025
<p>Brief Description of the Basis for the Assessment (may include assumptions, calculations, references, peer review, or comparison with licensee's results):</p> <p>A regional SRA using Sapphire 8, Version 8.2.12, and the Clinton SPAR model, Version 8.83, completed a condition assessment for the partial loss of offsite power to the site. The partial loss of offsite power was caused by: (1) the unavailability of Reserve Auxiliary Transformer B (RAT B) which was out for scheduled maintenance; and (2) the unavailability of the Emergency Reserve Auxiliary Transformer (ERAT), which was faulted. Therefore, neither RAT B nor the ERAT were capable of performing their probabilistic risk assessment (PRA) function to power safety-related buses 1A1, 1B1, and 1C1 from offsite power.</p>	

The analyst reviewed the Clinton SPAR model and determined the partial loss of offsite power to the safety-related buses could be modeled by setting the following house events to a TRUE condition: (1) HE-LOOP-I, "Loss of Offsite Power to Division I," (2) HE-LOOP-II, "Loss of Offsite Power to Division II," and (3) HE-LOOP-III, "Loss of Offsite Power to Division III." However, these events first had to be added to fault trees in the manner described below to properly reflect the loss of offsite power to the buses.

Fault Tree	Fault Tree Title	Gate	Gate Title	Gate Type	Event Added
ACP-4KVBUS-1A1	Division I AC Power System Fault Tree	ACP-4KVBUS-1A1101	-	OR	HE-LOOP-I
ACP-4KVBUS-1B1	Division II AC Power System	ACP-4KVBUS-1B1-2	Normal Source of Offsite Power from the RAT is Unavailable	OR	HE-LOOP-II
ACP-4KVBUS-1C1	Division III AC Power System Fault Tree	ACP-4KVBUS-1C1015	-	OR	HE-LOOP-III

The analyst used an exposure time of 40 hours in the analysis since RAT B and the ERAT were concurrently unavailable from approximately 1400 on November 14, 2025, until approximately 0600 on November 16, 2025. The analyst also credited FLEX and used the zero test and maintenance model for the analysis because the only other equipment out of service during a portion of the exposure period was train A of the standby gas treatment system, which is not a part of the SPAR model. No additional recovery credit was provided because the condition of RAT B and the ERAT prohibited repowering the safety buses from offsite power.

The analyst performed a sensitivity analysis by increasing the Emergency Diesel Generators' (EDGs) failure-to-run probabilities, since they did operate past their normal 24-hour PRA mission time. The analysis demonstrated the decision threshold would not be crossed.

It's important to note that for this analysis, the incremental conditional core damage probability (ICCDP) value is a better representation of the risk significance since it's a condition assessment for a degraded plant condition. Therefore, it is appropriate to compare the ICCDP value against the recommended event response thresholds of IMC 0309 for decision-making (as stated in previous versions of IMC 0309).

The estimated ICCDP is 1.77E-7 for internal events. This places the risk in the no additional inspection range.

RESPONSE DECISION

USING THE ABOVE INFORMATION AND OTHER KEY ELEMENTS OF CONSIDERATION AS APPROPRIATE, DOCUMENT THE RESPONSE DECISION TO THE EVENT OR CONDITION, AND THE BASIS FOR THAT DECISION

DECISION AND DETAILS OF THE BASIS FOR THE DECISION:

Based on the straightforward, non-complex nature of the event and the ICCDP being in the no additional inspection range, it is recommended to follow up on this event through baseline inspection.

Specifically, the several factors discussed below contributed to the recommendation for baseline follow-up: the reactor did not experience an initiating event as the Unit Auxiliary Transformer was unaffected, the reactor remained stable at 99% power as offsite power to the non-essential buses remained available; the EDGs functioned as designed without complication; licensee response appeared to be appropriate and timely; offsite power was restored within the time allowed by RICT risk calculations; and the estimated ICCDP is 1.77E-7 for internal events, which places the risk in the no additional inspection range.

For these reasons, it is recommended to follow up through baseline inspection.

If new information is later identified through inspection that changes any of the above assumptions, this conclusion may be revisited to ensure NRC response remains appropriate to the circumstances.

BRANCH CHIEF: Robert Ruiz



Signed by Ruiz, Robert
on 11/25/25

DATE: 11/25/2025

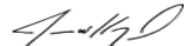
SRA: Lionel Rodriguez



Signed by Rodriguez, Lionel
on 11/25/25

DATE: 11/25/2025

DIVISION DIRECTOR: Jason Kozal



Signed by Kozal, Jason
on 11/25/25

DATE: 11/25/2025

DIVISION DIRECTOR:

DATE:

RA (if reactive inspection is initiated):

DATE:

ADAMS ACCESSION NUMBER: ML25329A203
ADAMS PACKAGE ACCESSION NUMBER: ML25329A375
EVENT NOTIFICATION REPORT NUMBER (as applicable):

Internal Distribution List is at the end of this document.

Decision Documentation for Reactive Inspection		
(Deterministic-only Criteria Analyzed)		
PLANT: Clinton	EVENT DATE: 11/14/2025	EVALUATION DATE: 11/20/2025
<p>Brief Description of the Significant Event or Degraded Condition:</p> <p>On Sunday, 11/9/2025, the licensee declared the B Reserve Auxiliary Transformer (RAT) inoperable for planned maintenance window scheduled to end on 11/16/2025. During this period, the emergency reserve auxiliary transformer (ERAT) was providing offsite power to the 4 kV safety-related vital buses (1A1, 1B1 and 1C1) and the site had implemented a risk-informed completion time (RICT) of 30 days.</p> <p>On 11/14/2025, the site was completing maintenance on the B RAT in preparation for its return to service. At 1351 CT, a contract worker entered the components for the ERAT and was fatally electrocuted after contacting energized equipment. This also caused a loss of the ERAT, resulting in a loss of offsite power to the 4kV vital buses. All 3 emergency diesel generators (EDGs) started as designed and supplied power to these buses. Offsite emergency services were called by the licensee to respond to the site (fire and ambulance responded, although there was no fire). Per the NRC's emergency action levels, the licensee declared a Notice of Unusual Event under MU1, for the loss of offsite power for greater than 15 minutes.</p> <p>During this event, the reactor remained stable at 99% power and power was available to the non-essential buses via the main power transformer and unit auxiliary transformer. There were no observed significant unexpected equipment issues and no concerns identified with operator performance.</p> <p>Following the licensee's restoration activities, the B RAT and ERAT were returned to available status, and the Unusual Event was exited by 0500 CT on 11/16/2025. Offsite power was subsequently restored to all the safety-related 4kV vital buses, ERAT and B RAT were declared operable, the EDGs were returned to a standby condition, and the RICT was exited at approximately 1615.</p>		

REACTOR SAFETY	
Y/N	IIT Deterministic Criteria
N	1. Led to a Site Area Emergency Remarks: No site area emergency was declared.
N	2. Exceeded a safety limit of the licensee's technical specifications

	Remarks: No safety limits were exceeded.
N	3. Involved circumstances sufficiently complex, unique, or not well enough understood, or involved safeguards concerns, or involved characteristics the investigation of which would best serve the needs and interests of the Commission
	Remarks: The event was not complex, and the cause was well understood.
Y/N	SI Deterministic Criteria
N	4. Significant failure to implement the emergency preparedness program during an actual event, including the failure to classify, notify, or augment onsite personnel
	Remarks: No issues were identified with the licensee's declaration of the Unusual Event or subsequent exit.
N	5. Involved significant deficiencies in operational performance which resulted in degrading, challenging, or disabling a safety system function or resulted in placing the plant in an unanalyzed condition for which available risk assessment methods do not provide an adequate or reasonable estimate of risk.
	Remarks: A loss of offsite power is an analyzed event in the licensee's design basis. There were no observed unexpected equipment issues and no concerns identified with operator performance during the event.

RADIATION SAFETY	
Y/N	IIT Deterministic Criteria
N	1. Led to a significant radiological release (levels of radiation or concentrations of radioactive material in excess of 10 times any applicable limit in the license or 10 times the concentrations specified in 10 CFR Part 20, Appendix B, Table 2, when averaged over a year) of byproduct, source, or special nuclear material to unrestricted areas
	Remarks: There was no release of radiological materials.
N	2. Led to a significant occupational exposure or significant exposure to a member of the public. In both cases, "significant" is defined as five times the applicable regulatory limit (except for shallow-dose equivalent to the skin or extremities from discrete radioactive particles)
	Remarks: There were no radiological impacts or consequences from this event.

N	3. Involved the deliberate misuse of byproduct, source, or special nuclear material from its intended or authorized use, which resulted in the exposure of a significant number of individuals
	Remarks: There were no radiological impacts or consequences from this event.
N	4. Involved byproduct, source, or special nuclear material, which may have resulted in a fatality
	Remarks: While a fatality did occur, it did not involve byproduct, source, or special nuclear material.
N	5. Involved circumstances sufficiently complex, unique, or not well enough understood, or involved safeguards concerns, or involved characteristics the investigation of which would best serve the needs and interests of the Commission
	Remarks: The event was not complex, and the cause was well understood.
Y/N	AIT Deterministic Criteria
N	6. Led to a radiological release of byproduct, source, or special nuclear material to unrestricted areas that resulted in occupational exposure or exposure to a member of the public in excess of the applicable regulatory limit (except for shallow-dose equivalent to the skin or extremities from discrete radioactive particles)
	Remarks: There were no radiological impacts or consequences from this event.
N	7. Involved the deliberate misuse of byproduct, source, or special nuclear material from its intended or authorized use and had the potential to cause an exposure of greater than 5 rem to an individual or 500 mrem to an embryo or fetus
	Remarks: This event did not involve byproduct, source, or special nuclear material.
N	8. Involved the failure of radioactive material packaging that resulted in external radiation levels exceeding 10 rads/hr or contamination of the packaging exceeding 1000 times the applicable limits specified in 10 CFR 71.87
	Remarks: There were no radiological impacts or consequences from this event.
N	9. Involved the failure of the dam for mill tailings with substantial release of tailings material and solution off site
	Remarks: N/A
Y/N	SI Deterministic Criteria

N	<p>10. May have led to an exposure in excess of the applicable regulatory limits, other than via the radiological release of byproduct, source, or special nuclear material to the unrestricted area; specifically</p> <ul style="list-style-type: none"> • occupational exposure in excess of the regulatory limits in 10 CFR 20.1201 • exposure to an embryo/fetus in excess of the regulatory limits in 10 CFR 20.1208 • exposure to a member of the public in excess of the regulatory limits in 10 CFR 20.1301
	Remarks: There were no radiological impacts or consequences from this event.
N	11. May have led to an unplanned occupational exposure in excess of 40 percent of the applicable regulatory limit (excluding shallow-dose equivalent to the skin or extremities from discrete radioactive particles)
	Remarks: There were no radiological impacts or consequences from this event.
N	12. Led to unplanned changes in restricted area dose rates in excess of 20 rem per hour in an area where personnel were present or which is accessible to personnel
	Remarks: There were no radiological impacts or consequences from this event.
N	13. Led to unplanned changes in restricted area airborne radioactivity levels in excess of 500 DAC in an area where personnel were present or which is accessible to personnel and where the airborne radioactivity level was not promptly recognized and/or appropriate actions were not taken in a timely manner
	Remarks: There were no radiological impacts or consequences from this event.
N	<p>14. Led to an uncontrolled, unplanned, or abnormal release of radioactive material to the unrestricted area</p> <ul style="list-style-type: none"> • for which the extent of the offsite contamination is unknown; or, • that may have resulted in a dose to a member of the public from loss of radioactive material control in excess of 25 mrem (10 CFR 20.1301(e)); or, • that may have resulted in an exposure to a member of the public from effluents in excess of the ALARA guidelines contained in Appendix I to 10 CFR Part 50
	Remarks: There were no radiological impacts or consequences from this event.
N	15. Led to a large (typically greater than 100,000 gallons), unplanned release of radioactive liquid inside the restricted area that has the potential for ground-water, or offsite, contamination
	Remarks: There were no radiological impacts or consequences from this event.
N	16. Involved the failure of radioactive material packaging that resulted in external radiation levels exceeding 5 times the accessible area dose rate limits specified

	in 10 CFR Part 71, or 50 times the contamination limits specified in 49 CFR Part 173
	Remarks: There were no radiological impacts or consequences from this event.
N	17. Involved an emergency or non-emergency event or situation, related to the health and safety of the public or on-site personnel or protection of the environment, for which a 10 CFR 50.72 report has been submitted that is expected to cause significant, heightened public or government concern
	Remarks: This event involved a loss of offsite power to the 4kV vital buses resulting in the declaration of an Unusual Event; however, the vital buses were subsequently powered by the EDGs, and no adverse equipment issues were observed. The reactor remained stable at 99% power as offsite power to the non-essential buses remained available. Therefore, this event did not result in significant risks to the health and safety of the public.

SAFEGUARDS/SECURITY	
Y/N	IIT Deterministic Criteria
N	1. Involved circumstances sufficiently complex, unique, or not well enough understood, or involved safeguards concerns, or involved characteristics the investigation of which would best serve the needs and interests of the Commission
	Remarks: The event was not complex, and the cause was well understood.
N	2. Failure of licensee significant safety equipment or adverse impact on licensee operations as a result of a safeguards initiated event (e.g., tampering).
	Remarks: There were no security issues associated with this event.
N	3. Actual intrusion into the protected area
	Remarks: N/A
Y/N	AIT Deterministic Criteria
N	4. Involved a significant infraction or repeated instances of safeguards infractions that demonstrate the ineffectiveness of facility security provisions

	Remarks: There were no security issues associated with this event.
N	5. Involved repeated instances of inadequate nuclear material control and accounting provisions to protect against theft or diversions of nuclear material
	Remarks: N/A
N	6. Confirmed tampering event involving significant safety or security equipment
	Remarks: This event did not result from tampering.
N	7. Substantial failure in the licensee's intrusion detection or package/personnel search procedures which results in a significant vulnerability or compromise of plant safety or security
	Remarks: N/A
Y/N	SI Deterministic Criteria
N	8. Involved inadequate nuclear material control and accounting provisions to protect against theft or diversion, as evidenced by inability to locate an item containing special nuclear material (such as an irradiated rod, rod piece, pellet, or instrument)
	Remarks: N/A
N	9. Involved a significant safeguards infraction that demonstrates the ineffectiveness of facility security provisions
	Remarks: N/A
N	10. Confirmation of lost or stolen weapon
	Remarks: N/A
N	11. Unauthorized, actual non-accidental discharge of a weapon within the protected area
	Remarks: N/A
N	12. Substantial failure of the intrusion detection system

	(not weather related)
	Remarks: N/A
N	13. Failure to the licensee's package/personnel search procedures which results in contraband or an unauthorized individual being introduced into the protected area
	Remarks: N/A
N	14. Potential tampering or vandalism event involving significant safety or security equipment where questions remain regarding licensee performance/response or a need exists to independently assess the licensee's conclusion that tampering or vandalism was not a factor in the condition(s) identified
	Remarks: N/A

RESPONSE DECISION

USING THE ABOVE INFORMATION AND OTHER KEY ELEMENTS OF CONSIDERATION AS APPROPRIATE, DOCUMENT THE RESPONSE DECISION TO THE EVENT OR CONDITION, AND THE BASIS FOR THAT DECISION.

DECISION AND DETAILS OF THE BASIS FOR THE DECISION:
(see above)

BRANCH CHIEF: Robert Ruiz



Signed by Ruiz, Robert
on 11/25/25

DATE: 11/25/2025

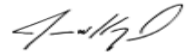
SRA: Lionel Rodriguez



Signed by Rodriguez, Lionel
on 11/25/25

DATE: 11/25/2025

DIVISION DIRECTOR: Jason Kozal



Signed by Kozal, Jason
on 11/25/25

DATE: 11/25/2025

DIVISION DIRECTOR:

DATE:

ADAMS ACCESSION NUMBER: ML25329A203

ADAMS PACKAGE ACCESSION NUMBER: ML25329A375

EVENT NOTIFICATION REPORT NUMBER (as applicable):

Distribution: Rodney.Clagg@nrc.gov; Sabrina.Atask@nrc.gov; Jason.Carneal@nrc.gov;
John.Giessner@nrc.gov; Mohammed.Shuaibi@nrc.gov; Blake.Welling@nrc.gov;
Ray.McKinley@nrc.gov; Mark.Franke@nrc.gov; Gregory.Suber@nrc.gov;
Laura.Pearson@nrc.gov; LaDonna.Suggs@nrc.gov; Ravi.Penmetsa@nrc.gov;
Jason.Kozal@nrc.gov; Billy.Dickson@nrc.gov; Jared.Heck@nrc.gov;
Patricia.Vossmar@nrc.gov; Karla.Stoedter@nrc.gov; Lindsay.Merker@nrc.gov;
Doris.Chyu@nrc.gov; Lionel.Rodriguez@nrc.gov;
NRR_Reactive_Inspection.Resource@nrc.gov; Frank.Arner@nrc.gov; Robert.Ruiz@nrc.gov