Exelon Fleet LAR
Common Language for TS 5.7
High Radiation Areas

NRC Pre-Submittal Meeting
November 19, 2018

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Agenda

- Introductions
- Expected outcome for meeting
- Overview/Drivers
- Proposed TS wording
- Gap analysis between ITS and Exelon proposed wording

Introductions / Opening Remarks

LAR Sponsor	Willie Harris
LAR Licensing Lead	Frank Mascitelli
Licensing MW Support	Rebecca Steinman
LAR Technical Lead	Mark Lyate

Expected Outcome of Meeting

- NRC has clear understanding of proposed LAR

- Exelon personal have a clear understanding of what additional information is required to support the SE

- NRC communicates requirements/insights that are needed to facilitate a timely review

- Minimize need for RAIs

LAR Overview

Basis for the Proposed Changes

- Reorganize the sections into a clear sequence and separating into sections so that the subject matter is more easily recognized and understood
- Revise TS wording to use “plain” language to improve worker efficiency, increase awareness, clarify requirements, and enhance readability
- Added benefit of consistency across the fleet

TS Sections to be Modified

- TS 5.7: Braidwood, Byron, Clinton, Dresden, James A. FitzPatrick, Ginna, LaSalle, Nine Mile Point-2, Peach Bottom, Quad Cities
- TS 6.12: Limerick, Three Mile Island-1 (TMI)
  NOTE: No impact on previously submitted TMI Post-defueled decommission TS LAR
- TS 6.7: Nine Mile Point-1
- Add new TS 5.7: Calvert Cliffs

Technical/Regulatory Analysis

- Comparison between Exelon proposed wording, RG 8.38 (Control of Access to High and Very High Radiation Areas in Nuclear Power Plants), and ITS 5.7 (High Radiation Area)
- Comparison between each site’s existing TS and Exelon proposed wording with justification for difference

TS Proposed Wording

Pursuant to 10 CFR Part 20, paragraph 20.1601(c), in lieu of the requirements of paragraph 20.1601(a)and 20.1601(b) of 10 CFR Part 20:

X.7.1 Access to each high radiation area, as defined in 10 CFR 20, in which an individual could receive a deep dose equivalent ≥ 0.1 rem in one hour (at 30 centimeters) shall be controlled as described below to prevent unauthorized entry.

a. Each area shall be barricaded and conspicuously posted as a high radiation area.

b. Entrance shall be controlled by requiring issuance of a Radiation Work Permit (RWP) or equivalent.

c. Each individual or group of individuals permitted to enter such areas shall possess, or be accompanied by, one or more of the following:

TS Proposed Wording

- A radiation monitoring device that continuously indicates the radiation dose rate in the area.
- A radiation monitoring device that continuously integrates the radiation dose rate in the area and alarms when a preset setpoint is received. Entry into high radiation areas with this monitoring device may be made after the dose rates in the area have been determined and personnel have been made knowledgeable of them.
- A radiation monitoring device that transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area.
- An individual qualified in radiation protection procedures with a radiation dose rate monitoring device. This individual shall be responsible for providing positive radiation protection control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by radiation protection supervision.

TS Proposed Wording – Continued

X.7.2 In addition to the preceding requirements, high radiation areas in which an individual could receive a deep dose equivalent ≥ 1.0 rem in one hour (at 30 centimeters) shall be provided with a locked or continuously guarded door, or gate, or equivalent to prevent unauthorized entry.

a. The keys to such locked doors or gates shall be administratively controlled in accordance with a program approved by the radiation protection manager.

b. Doors or gates shall remain locked except during periods of access by personnel under an approved RWP, or equivalent, to ensure individuals are informed of the dose rates in the immediate work areas prior to entry.

TS Proposed Wording – Continued

c. Individuals qualified in radiation protection procedures or personnel continuously escorted by such individuals may, for the performance of their assigned duties in high radiation areas, be exempt from the preceding requirements for issuance of an RWP or equivalent provided they are otherwise following plant radiation protection procedures for entry into, exit from, and work in such high radiation areas.

d. Individual high radiation areas in which an individual could receive a deep dose equivalent ≥ 1.0 rem in one hour (at 30 centimeters), accessible to personnel, that are located within large areas where no enclosure exists to enable locking, or that are not continuously guarded, and where no lockable enclosure can be reasonably constructed around the individual area require the following access controls:
   - Each area shall be barricaded and conspicuously posted.
   - A flashing light shall be activated as a warning device.

Gap Analysis

- Exelon proposed dose limit (0.1 rem/hr) for X.7.1 aligns with 10 CFR 20 definition of high radiation area versus the ITS value of 1.0 rem/hr
- Technical aspects X.7.1 items a, b, and c align with current ITS wording
- Technical aspects X.7.2 items a, b, c, and d align with current ITS wording
- Plain language wording of sub-bullets of item X.7.1 c align with RG 8.38
- Use of terminology “RWP or equivalent” allows for the use of other radiological work documents to control access that might not be specifically called an RWP
- Deletion of upper limit (in some existing site TS) allows the TS to read consistent with the 10 CFR 20 posting requirements

Closing Remarks

- Review meeting outcome expectations
- Summary of understandings
- Questions/Follow-up

Appendix for Exelon Fleet LAR Common Language for TS 5.7 High Radiation Areas

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Appendix Purpose

- Provided for discussion points throughout the teleconference
- Side-by-side comparison between Exelon proposed wording and ITS 5.7 wording
- NRC can identify areas that might need additional technical discussion for development of the Safety Evaluation (SE)

Gap Analysis – Continued

Proposed Fleet Common	ITS Numbering	ITS Rev 4 Wording
Pursuant to 10 CFR Part 20, paragraph 20.1601(c), in lieu of the requirements of paragraph 20.1601(a) and 20.1601(b) of 10 CFR Part 20:		As provided in paragraph 20.1601(c) of 10 CFR Part 20, the following controls shall be applied to high radiation areas in place of the controls required by paragraph 20.1601(a) and (b) of 10 CFR Part 20:
Each high radiation area in which an individual could receive a deep dose equivalent ≥ 0.1 Rem in one hour (at 30 centimeters):	5.7.1	High Radiation Areas with Dose Rates Not Exceeding 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation
Shall be barricaded and conspicuously posted as a high radiation area	5.7.1.a	Each entryway to such an area shall be barricaded and conspicuously posted as a high radiation area. Such barricades may be opened as necessary to permit entry or exit of personnel or equipment.
Entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP) or equivalent.	5.7.1.b	Access to, and activities in, each such area shall be controlled by means of Radiation Work Permit (RWP) or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.

Gap Analysis – Continued

Proposed Fleet Common	ITS Numbering	ITS Rev 4 Wording
Each individual or group of individuals permitted to enter such areas shall possess, or be accompanied by, one or more of the following: * A radiation monitoring device that continuously indicates the radiation does rate in the area * A radiation monitoring device that continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rates in the area have been determined and personnel have been made knowledgable of them * A radiation monitoring device that transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area. * An individual qualified in radiation protection procedures with a radiation dose rate monitoring device. This individual shall be responsible for providing positive radiation protection control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by radiation protection supervision.	5.7.1.d	Each individual or group entering such an area shall possess: 1. A radiation monitoring device that continuously displays radiation dose rates in the area, or 2. A radiation monitoring device that continuously integrates the radiation dose rates in the area and alarms when the device's dose alarm setpoint is reached, with an appropriate alarm setpoint, or 3. A radiation monitoring device that continuously transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area, or 4. A self-reading dosimeter (e.g., pocket ionization chamber or electronic dosimeter) and, (i) Be under the surveillance, as specified in the RWP or equivalent, while in the area, of an individual qualified in radiation protection procedures, equipped with a radiation monitoring device that continuously displays radiation does rates in the area; who is responsible for controlling personnel exposure within the area, or (ii) Be under the surveillance, as specified in the RWP or equivalent, while in the area, by means of closed circuit television, of personnel qualified in radiation protection procedures, responsible for controlling personnel radiation exposure in the area, and with the means to communicate with individuals in the area who are covered by such surveillance.

Gap Analysis – Continued

Proposed Fleet Common	ITS Numbering	ITS Rev 4 Wording
In addition to the preceding requirements, for high radiation areas in which an individual could receive a deep dose equivalent ≥ 1.0 Rem in one hour (at 30 centimeters):	5.7.2	High Radiation Areas with Dose Rates Greater than 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation, but less than 500 rads/hour at 1 Meter from the Radiation Source or from any Surface Penetrated by the Radiation
Shall be provided with a locked or continuously guarded door, or gate, or equivalent to prevent unauthorized enty. * The keys to such locked doors or gates shall be administratively controlled in accordance with a program approved by the radiation protection manager. * Doors or gates shall remain locked except during periods of access by personnel under an approved RWP, or equivalent, which shall ensure the individuals are informed of the dose rates in the immediate work areas.	5.7.2.a	Each entryway to such an area shall be conspicuously posted as a high radiation area and shall be provided with a locked or continuously guarded door or gate that prevents unauthorized entry, and, in addition: 1. All such door and gate keys shall be maintained under the administrative control of the shift supervisor, radiation protection manager, or his or her designee. 2. Doors and gates shall remain locked except during periods of personnel or equipment entry or exit.

Gap Analysis – Continued

Proposed Fleet Common	ITS Numbering	ITS Rev 4 Wording
Individuals qualified in radiation protection procedures or personnel continuously escorted by such individuals may, for the performance of their assigned duties in high radiation areas, be exempt from the preceding requirements for issuance of an RWP or equivalent provided they are otherwise following plant radiation protection procedures for entry into such high radiation areas.	5.7.2.c	Individuals qualified in radiation protection procedures may be exempted from the requirement for an RWP or equivalent while performing radiation surveys in such areas provided that they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.
Individual high radiation areas in which an individual could receive a deep dose equivalent >= 1.0 Rem in one hour (at 30 centimeters), accessible to personnel, that are located within large areas where no enclosure exists for enabling locking, or that are not continuously guarded, and where no lockable enclosure can be reasonably constructed around the individual area: * Shall be barricaded and conspicuously posted * A flashing light shall be activated as a warning device.	5.7.2.f	Such individual areas that are within a larger area where no enclosure exists for the purpose of locking and where no enclosure can reasonably be constructed around the individual area need not be controlled by a locked door or gate, nor continuously guarded, but shall be barricaded, conspicuously posted, and a clearly visible flashing light shall be activated at the area as a warning device.