Exelon Generation

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10 CFR 50.90

RS-19-039
TMI-19-013

June 26, 2019

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Braidwood Station, Units 1 and 2
Renewed Facility Operating License Nos. NPF-72 and NPF-77
NRC Docket Nos. STN 50-456 and STN 50-457

Byron Station, Units 1 and 2
Renewed Facility Operating License Nos. NPF-37 and NPF-66
NRC Docket Nos. STN 50-454 and STN 50-455

Calvert Cliffs Nuclear Power Plant, Units 1 and 2
Renewed Facility Operating License Nos. DPR-53 and DPR-69
NRC Docket Nos. 50-317 and 50-318

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

Dresden Nuclear Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-19 and DPR-25
NRC Docket Nos. 50-237 and 50-249

James A. FitzPatrick Nuclear Power Plant
Renewed Facility Operating License No. DPR-59
NRC Docket No. 50-333

LaSalle County Station, Units 1 and 2
Renewed Facility Operating License Nos. NPF-11 and NPF-18
NRC Docket Nos. 50-373 and 50-374

Limerick Generating Station, Units 1 and 2
Renewed Facility Operating License Nos. NPF-39 and NPF-85
NRC Docket Nos. 50-352 and 50-353

Nine Mile Point Nuclear Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-63 and NPF-69
NRC Docket Nos. 50-220 and 50-410

Peach Bottom Atomic Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-44 and DPR-56
NRC Docket Nos. 50-277 and 50-278

Quad Cities Nuclear Power Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-29 and DPR-30
NRC Docket Nos. 50-254 and 50-265

R.E. Ginna Nuclear Power Plant
Renewed Facility Operating License No. DPR-18
NRC Docket No. 50-244

Three Mile Island Nuclear Station, Unit 1
Renewed Facility Operating License No. DPR-50
NRC Docket No. 50-289

Subject: Exelon Fleet License Amendment Request - Common Language for Technical Specification High Radiation Area Administrative Controls

In accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," Exelon Generation Company, LLC (EGC) requests an amendment to the Technical Specifications (TS), which is Appendix A of the renewed facility and facility operating licenses listed above.

EGC proposes a change to the Technical Specifications (TS) 5.0 Administrative Controls, specifically 5.7 "High Radiation Area." Having standard common language for TS 5.7 (numbered 6.7 for Nine Mile Point, Unit 1, and 6.12 for Limerick and Three Mile Island, Unit 1) across EGC sites will allow for common governing procedures, better alignment and understanding by personnel, and promote a more efficient implementation of radiation protection processes for entering High Radiation Areas.

EGC has concluded that the proposed changes present no significant hazards consideration under the standards set forth in 10 CFR 50.92.

The proposed changes have been reviewed by each station's Plant Operations Review Committee in accordance with the requirements of the EGC Quality Assurance Program.

EGC requests approval of the proposed amendments by June 26, 2020. Once approved, the amendments shall be implemented within 60 days.

This amendment request contains no regulatory commitments.

Attachment 1 provides an evaluation of the proposed changes. Attachment 2 provides the existing TS pages marked up to show the proposed changes.

In accordance with 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b), EGC is notifying the states of Illinois, Maryland, New York and Pennsylvania of this request for changes to the Technical Specifications by transmitting a copy of this letter and its attachments to the designated State officials.

If you have any questions or require additional information, please contact Mr. Frank J. Mascitelli at (610) 765-5512.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 26th day of June 2019.

Respectfully,

James Barstow
Director - Licensing and Regulatory Affairs
Exelon Generation Company, LLC

Attachments: 1. Evaluation of Proposed Changes
2. Proposed Technical Specifications Markup Pages

cc: Regional Administrator - NRC Region I
Regional Administrator - NRC Region III
NRC Senior Resident Inspector - Braidwood Station
NRC Senior Resident Inspector - Byron Station
NRC Senior Resident Inspector - Calvert Cliffs Nuclear Power Plant
NRC Senior Resident Inspector - Clinton Power Station
NRC Senior Resident Inspector - Dresden Nuclear Power Station
NRC Senior Resident Inspector - James A. FitzPatrick Nuclear Power Plant
NRC Senior Resident Inspector - LaSalle County Station
NRC Senior Resident Inspector - Limerick Generating Station
NRC Senior Resident Inspector - Nine Mile Point Nuclear Station
NRC Senior Resident Inspector - Peach Bottom Atomic Power Station
NRC Senior Resident Inspector - Quad Cities Nuclear Power Station
NRC Senior Resident Inspector - R. E. Ginna Nuclear Power Plant
NRC Senior Resident Inspector - Three Mile Island Nuclear Station, Unit 1
NRC Project Manager, NRR - Braidwood Station
NRC Project Manager, NRR - Byron Station
NRC Project Manager, NRR - Calvert Cliffs Nuclear Power Plant
NRC Project Manager, NRR - Clinton Power Station
NRC Project Manager, NRR - Dresden Nuclear Power Station
NRC Project Manager, NRR - James A. FitzPatrick Nuclear Power Plant

NRC Project Manager, NRR - LaSalle County Station
NRC Project Manager, NRR - Limerick Generating Station
NRC Project Manager, NRR - Nine Mile Point Nuclear Station
NRC Project Manager, NRR - Peach Bottom Atomic Power Station
NRC Project Manager, NRR - Quad Cities Nuclear Power Station
NRC Project Manager, NRR - R. E. Ginna Nuclear Power Plant
NRC Project Manager, NRR - Three Mile Island Nuclear Station, Unit 1
Illinois Emergency Management Agency - Division of Nuclear Safety
Director, Bureau of Radiation Protection, PA Department of Environmental Protection
Chairman, Board of County Commissioners of Dauphin County, PA
Chairman, Board of Supervisors of Londonderry Township, PA
D. Tancabel, State of Maryland
A. L. Peterson, NYSERDA

Evaluation of Proposed Changes

Exelon Fleet License Amendment Request - Common Language for Technical Specification High Radiation Area Administrative Controls

Evaluation of Proposed Changes

1.0 DESCRIPTION

In accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," Exelon Generation Company, LLC (EGC) is requesting that the Technical Specifications (TS), which is Appendix A of the renewed facility/facility operating licenses for Braidwood Station, Byron Station, Calvert Cliffs Nuclear Power Plant, Clinton Power Station, Dresden Nuclear Power Station, James A. FitzPatrick Nuclear Power Plant, LaSalle County Station, Limerick Generating Station, Nine Mile Point Nuclear Station, Peach Bottom Atomic Power Station, Quad Cities Nuclear Power Station, R.E. Ginna Nuclear Power Plant and Three Mile Island Nuclear Station, Unit 1 under Renewed Facility/Facility Operating License Nos. NPF-72 and NPF-77; NPF-37 and NPF-66; DPR-53 and DPR-69; NPF-62; DPR-19 and DPR-25; DPR-59; NPF-11 and NPF-18; NPF-39 and NPF-85; DPR-63 and NPF-69; DPR-44 and DPR-56; DPR-29 and DPR-30; DPR-18; and DPR-50, respectively, be amended as proposed to permit changes to the administrative control TS Section 5.7 "High Radiation Area" (6.7 for Nine Mile Point-1, and 6.12 for Limerick and Three Mile Island). The proposed changes will provide common language across the fleet creating consistency, procedural alignment, and efficiencies through elimination of wording differences among the sites.

This License Amendment Request (LAR) provides a discussion and description of the proposed TS changes, a technical evaluation of the proposed TS changes and information supporting a finding of No Significant Hazards Consideration.

2.0 PROPOSED CHANGE

The most straightforward means of illustrating the changes for the proposed common language wording is by comparison to the Standard Technical Specifications (STS) wording. The current LaSalle TS 5.7 wording is highly consistent with the STS. For the purpose of general discussion, the proposed common language mark-up of the current LaSalle TS 5.7 wording is provided below. Insertions are shown in red italics and deletions are shown in green single strikeout.

The proposed common language version is consistent with the format of using two main sections - one for high radiation areas and one for locked high radiation areas. The indicated changes are intended to improve readability and clarity by removing redundancy and simplifying the language. The specific TS changes for each station are shown in Attachment 2.

5.7 High Radiation Area

~~As provided in paragraph 20.1601(c) of~~ *Pursuant to* 10 CFR Part 20, *paragraph 20.1601(c), in lieu of the requirements* of ~~the following controls shall be applied to high radiation areas in place of the controls required by~~ paragraph 20.1601(a) and *20.1601*(b) of 10 CFR Part 20:

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5.7.1 *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 from the radiation source or from any surface penetrated by the radiation) shall be controlled as described below to prevent unauthorized entry* ~~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~~.

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.

b. ~~Access to, and activities in, each such area~~ *Entrance* shall be controlled by ~~means of~~ *requiring issuance of a* Radiation Work Permit (RWP) or equivalent that includes specification of radiation dose rate in the immediate work area(s) and other appropriate radiation protection equipment and measures.

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 exempted from the *preceding* requirement*s* for *issuance of* an RWP or equivalent ~~while performing radiation surveys in such areas~~ provided ~~that~~ they are otherwise following plant radiation protection procedures for entry into, exit from, and work in such *high radiation* areas.

d. Each individual or group *of individuals permitted to* enter~~ing~~ such ~~an~~ area*s* shall possess, *or be accompanied by, one or more of the following*:

1. A radiation monitoring device that continuously ~~displays~~ *indicates the* radiation dose rate~~s~~ in the area.~~; or~~

2. A radiation monitoring device that continuously integrates the radiation dose rate~~s~~ in the area and alarms when ~~the device's dose alarm~~ *a preset* setpoint is reached~~, with an appropriate alarm setpoint, or~~. *Entry into high radiation areas with this monitoring device may be made after the dose rate in the area has been determined and personnel have been made knowledgeable of it.*

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,~~

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(i) Be under the surveillance, as specified in the RWP or equivalent, while in the area, of a*A*n individual qualified in radiation protection procedures, equipped 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.* that continuously displays radiation dose rates in the area; who is responsible for controlling personnel exposure with 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.

e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel will receive a pre-job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre-job briefing does not require documentation prior to initial entry.

5.7.2 *In addition to the requirements of Specification 5.7.1,* 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, *high radiation areas in which an individual could receive a deep dose equivalent > 1.0 rem in one hour (at 30 centimeters from the radiation source or from any surface penetrated by the radiation),* but less than 500 rads/hour (at 1 Mmeter from the Rradiation Ssource or from any Ssurface Ppenetrated by the Rradiation) *shall be provided with a locked or continuously guarded door, or gate, or equivalent to prevent unauthorized entry.* (continued)

a. *The* 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 *to such locked doors or gates, or equivalent,* shall be maintained under the administrative*ly* control*led in accordance with a program approved by* of the shift supervisor, radiation protection manager, or his or her designee.

b. 2. Doors and gates, *or equivalent,* shall remain locked except during periods of *access by* personnel or equipment entry or exit *under an approved RWP, or*

Evaluation of Proposed Changes

equivalent, to ensure individuals are informed of the dose rate in the immediate work areas prior to entry.

~~cb. Access to, and activities in, each such area shall be controlled by means of an RWP or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.~~

~~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.~~

~~d. Each individual or group entering such an area shall possess one of the following:~~

~~1. A radiation monitoring device that continuously integrates the radiation rates in the area and alarms when the device's dose alarm setpoint is reached, with an appropriate alarm setpoint, or~~

~~2. 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 with the means to communicate with and control every individual in the area, or~~

~~3. 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 dose 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 and control every individual in the area.~~

~~4. In those cases where options (2) and (3), above, are impractical or determined to be inconsistent with the "As Low As is Reasonably Achievable" principle, a radiation monitoring device that continuously displays radiation dose rates in the area.~~

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~~Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel will receive a pre-job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre-job briefing does not require documentation prior to initial entry.~~

~~/Such~~ individual *high radiation areas in which an individual could receive a deep dose equivalent > 1.0 rem in one hour (at 30 centimeters from the radiation source or from any surface penetrated by the radiation), accessible to personnel,* that are *located* within ~~a~~ larger area*s* where no enclosure exists ~~for the purpose of~~ *to enable* locking*, or that are not continuously guarded,* and where no *lockable* enclosure can *be* reasonably ~~be~~ constructed around the individual area ~~need not be controlled by a locked door or gate, nor continuously guarded,~~ *require both of the following access controls:*

1. ~~But~~ *Each area* shall be barricaded~~,~~ *and* conspicuously posted~~., and a~~

2. *A* ~~clearly visible~~ flashing light shall be activated ~~at the area~~ as a warning device.

3.0 BACKGROUND

Dose rates in various areas of nuclear power plants accessible to individuals can differ by several orders of magnitude. High radiation areas, where personnel can receive doses more than the regulatory limits in a relatively short period of time, require special controls. Very high radiation areas require much stricter monitoring and controls since failure to adequately implement effective radiological controls can result in radiation doses that result in a significant health risk. Thus, an important aspect of a nuclear power plant radiation protection program is the institution of a system of controls that includes procedures, training, audits, and physical barriers to inform and protect workers against unplanned exposures in high and very high radiation areas.

Technical Specification (TS) 5.7, "High Radiation Area" (numbered 6.7 for Nine Mile Point, Unit 1, and 6.12 for Limerick and Three Mile Island, Unit 1) specifies requirements for controlling access to high radiation areas. The exact wording of TS 5.7 (or 6.7 or 6.12, respectively) is not consistent across the EGC fleet. The intent of the proposed changes is to implement a standard common language High Radiation Area (HRA) TS program to be used at all EGC sites. The proposed TS wording is generally consistent with the STS as described in NUREGs 1430-1434 (Reference 1) with deltas due primarily with the removal of redundant requirements or simplifications of wording. Section 4, Table 4-1, "Summary of Major Changes in HRA TS Wording for Each Site" provides a detailed summary of the

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specific changes associated with each site. Having common TS language for all EGC sites will allow for common governing procedures, better alignment and understanding of requirements, and a more efficient implementation of Radiation Protection (RP) processes for entering HRAs. In addition, during fleet outage support, the proposed common language would prevent radiation protection personnel traveling from site to site from becoming distracted by the differences in the site-specific TS wording.

4.0 TECHNICAL EVALUATION

The significant differences between the existing STS wording currently used at LaSalle and the proposed common language TS wording are as follows:

1. A minimum threshold at which an individual could receive a deep dose equivalent > 0.1 rem/hour is established as the lower limit for a high radiation area and at which radiation area program controls are required. The STS explicitly establishes high radiation controls to be in effect not to exceed an upper limit of 1.0 rem/hour (1000 mrem/hour). The lower limit in proposed TS 5.7.1 is consistent with the 10 CFR 20 high radiation area definition.
2. Removal of the high radiation limit (1000 mrem/hour = 1 rem/hour) for HRAs from TS 5.7.1 clarifies that the requirements in TS 5.7.2 are in addition to the requirements applicable to areas > 1000 mrem/hour (1 rem/hour).
3. Removed as one of the options to enter a HRA the requirement to possess a self-reading pocket ionization chamber dosimeter. These are no longer used at EGC sites and are an obsolete technology.
4. Removed the requirement to receive a pre-job briefing prior to entering a HRA for personnel continuously escorted by individuals qualified in radiation protection procedures, because such qualified individuals can provide positive radiation protection control over activities in the high radiation area.
5. For locked HRAs, door and gate keys will be administratively controlled in accordance with a program approved by the radiation protection manager in lieu of being administratively controlled by the operations shift supervisor or the radiation protection manager or their designee. The key control program will be in accordance with established regulatory requirements and existing EGC procedural requirements. (Reference 2).
6. Eliminated TS 5.7. 2. b, c, d as this is redundant to requirements already required in TS 5.7.1 which have been invoked for TS 5.7.2 with the phrase " in addition to the requirements of Specification 5.7.1" at the beginning of Section 5.7.2.

The proposed revision of TS 5.7.1.b requires HRA entrance be controlled by "a Radiation Work Permit (RWP) or equivalent that includes specification of radiation dose rate in the immediate work area(s)". The use of terminology "RWP or equivalent" allows for the use of other radiological work documents to control access to HRA/LHRA that might not specifically be called "radiation work permits". For example, actual dose rate in the immediate work area may be captured in an RP technician survey or similar acceptable alternative method of informing a radiation worker of the level of radiation in the immediate area.

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The significant differences between each site's current TS wording and the proposed common language TS wording are identified and discussed in Table 4-1 below and generally fall into one or more of the above categories.

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Table 4-1: Summary of Major Changes in HRA TS Wording for Each Site

Site	**5.7.1 Differences** (or 6.7.1 or 6.12.1)	**5.7.2 Differences** (or 6.7.2 or 6.12.2)	**Comments**
Braidwood (Insert 1)	Removed statement about TS 5.7 not applying to very high radiation areas. Removed high rad limit (1000 mrem/hour or 1 rem/hour) since these requirements are now also applicable to areas > 1000 mrem/hour (1 rem/hour). Removed requirements for an RWP in lieu of being escorted by qualified personnel. Provided an additional alternate HRA entrance requirement for personnel possessing a monitoring device that continuously transmits dose rate and cumulative dose rate to a remote receiver monitored by a radiation protection personnel.	Removed alternate method of direct or continuous electronic surveillance in lieu of locked door. Key control changed from administrative control of the Shift Manager on duty or health physics supervision to administrative control in accordance with a program approved by the radiation protection manager. Removed 5.7.2.d and e because they are redundant to requirements in other sections.	Key control will be in accordance with a program approved by the radiation protection manager that has been previously accepted by the NRC at an EGC site (Clinton).
Byron (Insert 1)	Same as Braidwood	Same as Braidwood	Same as Braidwood
Calvert Cliffs (Insert 1)	Adds a new High Radiation Area (HRA) section to TS.	Adds a new locked HRA (LHRA) section to TS.	Calvert Cliffs does not have an existing HRA section in their TS. Calvert Cliffs is adding new TS requirements to be consistent with the Exelon Fleet. The current requirements are contained in RP-AA-460 (Reference 2).

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Table 4-1: Summary of Major Changes in HRA TS Wording for Each Site

Site	**5.7.1 Differences** (or 6.7.1 or 6.12.1)	**5.7.2 Differences** (or 6.7.2 or 6.12.2)	**Comments**
Clinton (Insert 1)	Adds clarification that an RWP or equivalent specifies radiation dose rate and other appropriated radiation protection equipment and measures. Adds a radiation monitoring device that continuously transmits to a remote receiver.	Removes maximum allowable stay time or dose for a dose rate > 3000 mrem/hour. Removes direct or remote (such as closed-circuit TV cameras) continuous surveillance in lieu of maximum allowable stay time or dose. RWP exemption in 5.7.4 moved to new 5.7.1.c without the ≤ 3 rem/hour limitation.	The RWP exemption can be used for high radiation areas with a dose rate > 3000 mrem/hour.
Dresden (Insert 1)	Provides an additional alternate HRA entrance requirement for personnel possessing a monitoring device that continuously transmits dose rate and cumulative dose rate to a remote receiver monitored by a radiation protection personnel.	Removes alternate method of direct or continuous electronic surveillance in lieu of locked door. Key control changed from administrative control of the shift manager on duty or radiation protection supervision to administrative control in accordance with a program approved by the radiation protection manager. Removes 5.7.2.b, c because it is redundant to requirement in 5.7.1. Relocates the 5.7.3 no lockable enclosure exception to new 5.7.2.c paragraph.	Key control will be in accordance with a program approved by the radiation protection manager that has been previously accepted by the NRC at an EGC site (Clinton). Moved 5.7.3 requirements to 5.7.2.c.

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Table 4-1: Summary of Major Changes in HRA TS Wording for Each Site

Site	**5.7.1 Differences** (or 6.7.1 or 6.12.1)	**5.7.2 Differences** (or 6.7.2 or 6.12.2)	**Comments**
FitzPatrick (Insert 1)	Revises applicability from not exceeding 1.0 rem/hour to > 0.1 rem/hour. Removes allowance of continuously guarded entrance. Removes allowances for self-reading pocket ionization chamber dosimeter usage (currently 5.7.1.d.4 and 5.7.2.d.3). Removes separate requirement for pre-job briefs to provide knowledge of area dose rate (still required to be part of RWP in 5.7.1.b).	Key control changed from administrative control of the shift manager, radiation protection manager, or designee to administrative control in accordance with a program approved by the radiation protection manager. Removes 5.7.2.b, c because it is mostly redundant to requirements in 5.7.1. Removes separate requirement for pre-job briefs to provide knowledge of area dose rate (still required to be part of RWP in 5.7.1.b).	Key control will be in accordance with a program approved by the radiation protection manager that has been previously accepted by the NRC at an EGC site (Clinton).
LaSalle (Insert 1)	Revises applicability from not exceeding 1.0 rem/hour to > 0.1 rem/hour. Removes allowances for self-reading pocket ionization chamber dosimeter usage (currently 5.7.1.d.4). Removes separate requirement for pre-job briefs to provide knowledge of area dose rate (still required to be part of RWP in 5.7.1.b).	Key control changed from administrative control of the shift supervisor, radiation, protection manager, or his or her designee to administrative control in accordance with a program approved by the radiation protection manager. Removes 5.7.2.b, c because it is redundant to requirements in 5.7.1. Removes separate requirement for pre-job briefs to provide knowledge of area dose rate (still required to be part of RWP in 5.7.1.b).	Key control will be in accordance with a program approved by the radiation protection manager that has been previously accepted by the NRC at an EGC site (Clinton).

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Table 4-1: Summary of Major Changes in HRA TS Wording for Each Site

Site	**5.7.1 Differences** (or 6.7.1 or 6.12.1)	**5.7.2 Differences** (or 6.7.2 or 6.12.2)	**Comments**
Limerick (Insert 3)	Removes high rad limit (1 rem/hour) since these requirements are now also applicable to areas > 1 rem/hour. Removes allowances for self-reading pocket ionization chamber dosimeter usage (currently 6.12.1.d.4).	Key control changed from administrative control of radiation protection supervision to administrative control in accordance with a program approved by the radiation protection manager.	Key control will be in accordance with a program approved by the radiation protection manager that has been previously accepted by the NRC at an EGC site (Clinton).
Nine Mile Point, Unit 1 (Insert 2)	Revises applicability from not exceeding 1.0 rem/hour to > 0.1 rem/hour. Removes allowances for self-reading pocket ionization chamber dosimeter usage (currently 6.7.1.d.4) Removes separate requirement for pre-job briefs to provide knowledge of area dose rate (still required to be part of RWP in 6.7.1.b)	Key control changed from administrative control of the Station Shift Supervisor - Nuclear, radiation protection manager, or his or her designee to administrative control in accordance with a program approved by the radiation protection manager. Removes 6.7.2.b, c, because it is redundant to requirements in 6.7.1. Removes separate requirement for pre-job briefs to provide knowledge of area dose rate (still required to be part of RWP in 6.7.1.b)	Key control will be in accordance with a program approved by the radiation protection manager that has been previously accepted by the NRC at an EGC site (Clinton).
Nine Mile Point, Unit 2 (Insert 1)	Revises applicability from not exceeding 1.0 rem/hour to > 0.1 rem/hour. Removes allowances for self-reading pocket ionization chamber dosimeter usage (currently 5.7.1.d.4)	Key control changed from administrative control of the Station Shift Supervisor - Nuclear or a designee, or the radiation protection manager or a designee to administrative control in accordance with a program approved by the radiation protection manager. Removes 5.7.2.b, c, because it is redundant to requirements in 5.7.1	Key control will be in accordance with a program approved by the radiation protection manager that has been previously accepted by the NRC at an EGC site (Clinton).

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Table 4-1: Summary of Major Changes in HRA TS Wording for Each Site

Site	**5.7.1 Differences** (or 6.7.1 or 6.12.1)	**5.7.2 Differences** (or 6.7.2 or 6.12.2)	**Comments**
Peach Bottom (Insert 1)	Revises applicability from not exceeding 1.0 rem/hour to > 0.1 rem/hour. Removes allowances for self-reading pocket ionization chamber dosimeter usage (currently 5.7.1.d.4). Removes separate requirement for pre-job briefs to provide knowledge of area dose rate (still required to be part of RWP in 5.7.1.b).	Key control changed from administrative control of the shift supervisor, radiation protection manager, or his or her designee to administrative control in accordance with a program approved by the radiation protection manager. Removes 5.7.2.b, c because it is redundant to requirements in 5.7.1. Removes separate requirement for pre-job briefs to provide knowledge of area dose rate (still required to be part of RWP in 5.7.1.b).	Key control will be in accordance with a program approved by the radiation protection manager that has been previously accepted by the NRC at an EGC site (Clinton).
Quad Cities (Insert 1)	Removes high rad limit (1000 mrem/hour or 1 rem/hour) since these requirements are now also applicable to areas > 1000 mrem/hour (1 rem/hour). Provides an additional alternate HRA entrance requirement for personnel possessing a monitoring device that continuously transmits dose rate and cumulative dose rate to a remote receiver monitored by a radiation protection personnel.	Removes alternate method of direct or continuous electronic surveillance in lieu of locked door. Key control changed from administrative control of the Shift Engineer on duty or radiation protection supervision to administrative control in accordance with a program approved by the radiation protection manager. Removes 5.7.2.b, c because it is redundant to requirements in 5.7.1.	Key control will be in accordance with a program approved by the radiation protection manager that has been previously accepted by the NRC at an EGC site (Clinton).

Evaluation of Proposed Changes

Table 4-1: Summary of Major Changes in HRA TS Wording for Each Site

Site	**5.7.1 Differences** (or 6.7.1 or 6.12.1)	**5.7.2 Differences** (or 6.7.2 or 6.12.2)	**Comments**
R. E. Ginna (Insert 1)	Removes high rad limit (1000 mrem/hour or 1 rem/hour) since these requirements are now also applicable to areas > 1000 mrem/hour (1 rem/hour). Provides an additional alternate HRA entrance requirement for personnel possessing a monitoring device that continuously transmits dose rate and cumulative dose rate to a remote receiver monitored by a radiation protection personnel.	Key control changed from administrative control of the Shift Supervisor on duty or radiation protection supervision to administrative control in accordance with a program approved by the radiation protection manager. Removes direct or remote (such as closed-circuit TV cameras) continuous surveillance in lieu of maximum allowable stay time or dose.	Key control will be in accordance with a program approved by the radiation protection manager that has been previously accepted by the NRC at an EGC site (Clinton).

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Table 4-1: Summary of Major Changes in HRA TS Wording for Each Site

Site	**5.7.1 Differences** (or 6.7.1 or 6.12.1)	**5.7.2 Differences** (or 6.7.2 or 6.12.2)	**Comments**
Three Mile Island, Unit 1 (Insert 3)	Invokes the exception of 10 CFR 20.1601(c) for alternate requirements in lieu of the control device and alarm signal requirements of 10 CFR 20.1601(a) and (b). Removes high rad limit (1000 mrem/hour or 1 rem/hour) since these requirements are now also applicable to areas > 1000 mrem/hour (1 rem/hour). Provides for an exemption for requirements for issuance of an RWP for individuals continuously escorted by individuals qualified in radiation protection procedure. Provides an additional alternate HRA entrance requirement for personnel possessing a monitoring device that continuously transmits dose rate and cumulative does rate to a remote receiver monitored by a radiation protection personnel. Key control changed from administrative control of the Radiological Controls Supervisor to administrative control in accordance with a program approved by the radiation protection manager.		The proposed common language is consistent with, and bounds, the control device and alarm signal exceptions. Key control will be in accordance with a program approved by the radiation protection manager that has been previously accepted by the NRC at an EGC site (Clinton). Both HRA and LHRA requirements are contained in 6.12.1.

Evaluation of Proposed Changes

5.0 REGULATORY EVALUATION

5.1 Applicable Regulatory Requirements/Criteria

The proposed changes have been evaluated to determine whether applicable regulations and requirements continue to be met. EGC has determined that the proposed changes do not require any exemptions or relief from regulatory requirements. The following current applicable regulations and regulatory requirements were reviewed in making this determination:

10 CFR 20, Standards for Protection Against Radiation

10 CFR 20.1101, "Radiation Protection Programs," requires licensees to develop and implement a radiation protection program appropriate to the scope of licensed activities and potential hazards. The proposed changes conform to 10 CFR 20.1101 requirements.

10 CFR 20.2102, "Records of Radiation Protection Programs," requires licensees document radiation protection programs. The proposed changes conform to 10 CFR 20.2102 requirements.

10 CFR 20.1601, "Control of access to high radiation areas," provides requirements to provide access control features at each entrance or access point to a high radiation area. The proposed changes conform to 10 CFR 20.1601 requirements.

NUREG-800, Chapter 12.5 Operational Radiation Protection Program

This standard review plan provides NRC technical reviewers with guidance for acceptable requirements for an operational radiation protection program, in part, for the physical and administrative measures for controlling access to and work within radiation areas, high radiation areas (HRAs), and very high radiation areas (VHRAs). The proposed changes conform to NUREG-800 Chapter 12.5 requirements for HRAs.

Regulatory Guide 8.38, Rev. 1, Control of Access to High and Very High Radiation Areas in Nuclear Power Plants

Regulatory Guide (RG) 8.38, "Control of Access to High and Very High Radiation Area in Nuclear Power Plants," published in May 2006 describes methods that the NRC considers acceptable for complying with the regulations regarding radiation safety and protection and for specifically complying with implementing the requirements of 10 CFR 20 Sections 1101, 2101, 1601 and 1602. The proposed license amendment conforms to RG 8.38 requirements for HRAs. With regards to HRA barrier key control, an administrative procedure (Reference 2) is in place to address the management oversight and specific control measures needed for entry into high and very high radiation areas, including the control and distribution of keys.

Evaluation of Proposed Changes

5.2 Precedent

The intent of the proposed changes is to implement a standard common language High Radiation Area TS to be used at all EGC sites. The proposed TS rewording is consistent with existing standard TS (STS) format of using two main sections (one for high radiation areas and one for locked high radiation areas), with edits to remove redundancy and to improve clarity and readability.

5.3 No Significant Hazards Consideration

Exelon Generation Company, LLC (EGC) has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of Amendment," as discussed below:

1. Will operation of the facility in accordance with the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed changes are administrative in nature and only related to the control of access to high radiation areas for controlling dose to plant personnel. The proposed changes do not impact any accident initiators and do not require any plant modifications which affect the performance capability of the structures, systems and components relied upon to mitigate the consequences of postulated accidents; therefore, there is no impact to the probability or consequences of an accident previously evaluated.

Based on the above, EGC concludes that the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Will operation of the facility in accordance with the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed amendments involve changes to radiological program controls for access to high radiation areas, which are administrative in nature and do not impact physical plant systems. These proposed changes do not alter accident analysis assumptions, add any initiators, or affect the function of plant systems or the manner in which systems are operated, maintained, modified, tested, or inspected. The proposed changes do not require any plant modifications which affect the performance capability of the structures, systems and components relied upon to mitigate the consequences of postulated accidents.

Based on the above discussion, EGC concludes that the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

Evaluation of Proposed Changes

3. Will operation of the facility in accordance with the proposed amendment involve a significant reduction in a margin of safety?

Response: No.

The proposed changes are administrative in nature and only related to the control of access to high radiation areas to minimize dose to plant personnel. The proposed changes are intended to provide clarity and/or flexibility with respect to the administration and programmatic controls while retaining adequate margin of safety for minimizing dose to site personnel consistent with the requirements of 10 CFR 20, "Standards for Protection Against Radiation," and the guidance of RG 8.38, "Control of Access to High and Very High Radiation Areas in Nuclear Power Plants," published in May 2006. Since there are no associated physical plant changes, the ability of the plant to respond to and mitigate accidents is unchanged by the proposed changes.

Based on the above, EGC concludes that the proposed changes do not involve a significant reduction in a margin of safety.

Based on the above evaluation of the three criteria, EGC concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

5.4 Conclusion

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

6.0 ENVIRONMENTAL CONSIDERATION

The proposed amendment does not change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR 20 and does not change an inspection or surveillance requirement. The proposed amendments only revise Technical Specifications related to the control of access to high radiation areas for controlling dose to plant personnel. The proposed amendments do not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in the individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, in accordance with 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

Evaluation of Proposed Changes

7.0 REFERENCES

1. NUREG 1430, Standard Technical Specifications (STS), Babcock and Wilcox Plants, Revision 4, dated April 2012

   NUREG 1431, STS, Westinghouse Plants, Revision 4, dated April 2012

   NUREG 1432, STS, Combustion Engineering, Revision 4, dated April 2012

   NUREG 1433, STS, General Electric BWR/4, Revision 4, dated April 2012

   NUREG 1434, STS, General Electric BWR/6, Revision 4, dated April 2012

2. EGC Procedure RP-AA-460, Revision 36, Controls for High and Locked High Radiation Areas

Attachment 2

Proposed Technical Specifications Markup Pages

Exelon Fleet License Amendment Request - Common Language for Technical Specification High Radiation Area Administrative Controls

Braidwood, Units 1 & 2	TS pages 5.7-1, 2, 3
Byron, Units 1 & 2	TS pages 5.7-1, 2, 3
Calvert Cliffs, Units 1 & 2	TS pages 5.7-1, 2, 3
Clinton	TS pages 5.0-20, 21
Dresden, Units 2 & 3	TS pages 5.7-1, 2
James A. FitzPatrick	TS pages 5.7-1, 2, 3, 4
LaSalle, Units 1 & 2	TS pages 5.7-1, 2, 3, 4, 5
Limerick, Units 1 & 2	TS pages 6-20, 20a, 21, 21a
Nine Mile Point, Unit 1	TS pages 359, 360, 361
Nine Mile Point, Unit 2	TS pages 5.7-1, 2, 3, 4
Peach Bottom, Units 2 & 3	TS pages 5.0-23, 24, 25, 26
Quad Cities, Units 1 & 2	TS pages 5.7-1, 2
R. E. Ginna	TS pages 5.7-1, 2
Three Mile Island, Unit 1	TS pages 6-22

5.0 ADMINISTRATIVE CONTROLS

Insert 1

5.7 High Radiation Area

~~This Specification provides alternate methods for controlling access to high radiation areas and does not apply to very high radiation areas as defined in 10 CFR 20.~~

~~5.7.1~~ ~~Pursuant to 10 CFR 20, paragraph 20.1601(c), in lieu of the requirements of 10 CFR 20.1601, each high radiation area, as defined in 10 CFR 20, in which the intensity of radiation is > 100 mrem/hr but ≤ 1000 mrem/hr at 30 cm (12 inches) from the radiation source or from any surface which the radiation penetrates, shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP) or equivalent document that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures. Individuals qualified in radiation protection procedures or personnel continuously escorted by such individuals may be exempt from the RWP issuance requirement during the performance of their assigned duties in high radiation areas with exposure rates ≤ 1000 mrem/hr, provided they are otherwise following plant radiation protection procedures for entry into such high radiation areas.~~

~~Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:~~

~~a. A radiation monitoring device that continuously indicates the radiation dose rate in the area.~~

~~b. 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 rate levels in the area have been established and personnel are aware of them.~~

5.7 High Radiation Area

5.7.1 (continued)

c. An individual qualified in radiation protection procedures with a radiation dose rate monitoring device, who is responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified in the RWP or equivalent document.

5.7.2 In addition to the requirements of Specification 5.7.1, areas accessible to personnel with radiation levels > 1000 mrem/hr at 30 cm (12 inches) from the radiation source or from any surface which the radiation penetrates shall require the following:

a. Doors shall be locked to prevent unauthorized entry and shall not prevent individuals from leaving the area. In place of locking the door, direct or continuous electronic surveillance that is capable of preventing unauthorized entry may be used. The keys shall be maintained under the administrative control of the Shift Manager on duty or health physics supervision;

b. Personnel access and exposure control requirements of activities being performed within these areas shall be specified by an approved RWP or equivalent document that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures;

c. Each person entering the area shall be provided with an alarming radiation monitoring device that continuously integrates the radiation dose rate (such as an electronic dosimeter). Surveillance and radiation monitoring by health physics personnel may be substituted for an alarming dosimeter;

5.7 High Radiation Area

5.7.2 (continued)

d. For individual high radiation areas accessible to personnel with radiation levels of > 1000 mrem/hr at 30 cm (12 inches) that are located within large areas such as reactor containment, where no enclosure exists for purposes of locking, and where no enclosure can be reasonably constructed around the individual area, that individual area shall be barricaded, conspicuously posted, and a flashing light shall be activated as a warning device; and

e. Except for individuals qualified in radiation protection procedures, or personnel escorted by such individuals, entry into such areas shall be made after dose rates in the area have been determined and entry personnel are knowledgeable of them. Individuals escorted will receive a pre-job briefing prior to entry into such areas.

5.0 ADMINISTRATIVE CONTROLS

Insert 1

5.7 High Radiation Area

~~This Specification provides alternate methods for controlling access to high radiation areas and does not apply to very high radiation areas as defined in 10 CFR 20.~~

~~5.7.1~~ ~~Pursuant to 10 CFR 20, paragraph 20.1601(c), in lieu of the requirements of 10 CFR 20.1601, each high radiation area, as defined in 10 CFR 20, in which the intensity of radiation is > 100 mrem/hr but ≤ 1000 mrem/hr at 30 cm (12 inches) from the radiation source or from any surface which the radiation penetrates, shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP) or equivalent document that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures. Individuals qualified in radiation protection procedures or personnel continuously escorted by such individuals may be exempt from the RWP issuance requirement during the performance of their assigned duties in high radiation areas with exposure rates ≤ 1000 mrem/hr, provided they are otherwise following plant radiation protection procedures for entry into such high radiation areas.~~

~~Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:~~

~~a. A radiation monitoring device that continuously indicates the radiation dose rate in the area.~~

~~b. 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 rate levels in the area have been established and personnel are aware of them.~~

5.7 High Radiation Area

5.7.1 (continued)

c. An individual qualified in radiation protection procedures with a radiation dose rate monitoring device, who is responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified in the RWP or equivalent document.

5.7.2 In addition to the requirements of Specification 5.7.1, areas accessible to personnel with radiation levels > 1000 mrem/hr at 30 cm (12 inches) from the radiation source or from any surface which the radiation penetrates shall require the following:

a. Doors shall be locked to prevent unauthorized entry and shall not prevent individuals from leaving the area. In place of locking the door, direct or continuous electronic surveillance that is capable of preventing unauthorized entry may be used. The keys shall be maintained under the administrative control of the Shift Manager on duty or health physics supervision;

b. Personnel access and exposure control requirements of activities being performed within these areas shall be specified by an approved RWP or equivalent document that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures;

c. Each person entering the area shall be provided with an alarming radiation monitoring device that continuously integrates the radiation dose rate (such as an electronic dosimeter). Surveillance and radiation monitoring by health physics personnel may be substituted for an alarming dosimeter;

5.7 High Radiation Area

5.7.2 (continued)

d. For individual high radiation areas accessible to personnel with radiation levels of > 1000 mrem/hr at 30 cm (12 inches) that are located within large areas such as reactor containment, where no enclosure exists for purposes of locking, and where no enclosure can be reasonably constructed around the individual area, that individual area shall be barricaded, conspicuously posted, and a flashing light shall be activated as a warning device; and

e. Except for individuals qualified in radiation protection procedures, or personnel escorted by such individuals, entry into such areas shall be made after dose rates in the area have been determined and entry personnel are knowledgeable of them. Individuals escorted will receive a pre-job briefing prior to entry into such areas.

5.0 ADMINISTRATIVE CONTROLS

5.7 High Radiation Area

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:

5.7.1 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 from the radiation source or from any surface penetrated by the radiation) shall be controlled as described below to prevent unauthorized entry.

a. Each 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.

b. Entrance shall be controlled by requiring issuance of a Radiation Work Permit (RWP) or equivalent that includes specification of radiation dose rate in the immediate work area(s) and other appropriate radiation protection equipment and measures.

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

5.7 High Radiation Area

1. A radiation monitoring device that continuously indicates the radiation dose rate in the area.

2. A radiation monitoring device that continuously integrates the radiation dose rate in the area and alarms when a preset setpoint is reached. Entry into high radiation areas with this monitoring device may be made after the dose rate in the area have been determined and personnel have been made knowledgeable of it.

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.

4. An individual qualified in radiation protection procedures equipped 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.

5.7.2 In addition to the requirements of Specification 5.7.1, high radiation areas in which an individual could receive a deep dose equivalent > 1.0 rem in one 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 entry.

5.7 High Radiation Area

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

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

c. Individual high radiation areas in which an individual could receive a deep dose equivalent > 1.0 rem in one hour (at 30 centimeters from the radiation source or from any surface penetrated by the radiation), accessible to personnel, that are located within larger 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 both of the following access controls.

   1. Each area shall be barricaded and conspicuously posted.

   2. A flashing light shall be activated as a warning device.

5.0 ADMINISTRATIVE CONTROLS

5.7 High Radiation Area

Insert 1

5.7.1 Pursuant to 10 CFR 20, paragraph 20.1601(c), in lieu of the requirements of 10 CFR 20.1601(a), each high radiation area, as defined in 10 CFR 20, in which an individual could receive a deep dose equivalent > 100 mrem in one hour (at 30 cm), shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP) or equivalent.

Any individual or group of individuals permitted to enter such areas shall be provided with, or accompanied by, one or more of the following:

a. A radiation monitoring device that continuously indicates the radiation dose rate in the area.

b. 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 knowledgeable of them.

c. 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.

5.7.2 In addition to the requirements of Specification 5.7.1, high radiation areas in which an individual could receive a deep dose equivalent ≥ 1000 mrem in one hour (at 30 cm) shall be provided with locked or continuously guarded doors to prevent unauthorized entry. The keys to such locked doors shall be administratively controlled in accordance with a program approved by the radiation protection manager. Doors shall remain locked except during periods of access by personnel under an approved RWP, or equivalent, that shall ensure the individuals are informed of the dose rates in the immediate work areas.

(continued)

5.7 High Radiation Area

~~5.7.2 (continued)~~

~~Individual high radiation areas in which an individual could receive a deep dose equivalent ≥ 1000 mrem in one hour (at 30 cm), accessible to personnel, that are located within large areas such as reactor containment, 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, and a flashing light shall be activated as a warning device.~~

~~5.7.3~~ ~~In addition to requirements of Specification 5.7.1 and 5.7.2 for high radiation areas, if an individual could receive a deep dose equivalent > 3000 mrem in one hour (at 30 cm), the RWP or equivalent shall also specify the maximum allowable stay time or dose (on an alarming dosimeter) for individuals in those areas. In lieu of the stay time or dose specification of the RWP or equivalent, direct or remote (such as closed circuit TV cameras) continuous surveillance may be made by personnel qualified in radiation protection procedures to provide positive exposure control over the activities being performed within the areas.~~

~~5.7.4~~ ~~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 in which an individual could receive a deep dose equivalent ≤ 3000 mrem in one hour (at 30 cm), be exempt from the requirements of Specification 5.7.1 and 5.7.2 for issuance of an RWP or equivalent provided they are otherwise following plant radiation protection procedures for entry into such high radiation areas.~~

5.0 ADMINISTRATIVE CONTROLS

Insert 1

5.7 High Radiation Area

~~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:~~

~~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~~

~~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.~~

~~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.~~

~~c. Individuals qualified in radiation protection procedures and personnel continuously escorted by such individuals may be exempted from the requirement for an RWP or equivalent while performing their assigned duties provided that they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.~~

~~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~~

~~(continued)~~

5.7 High Radiation Area

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 (continued)

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 dose rates in the area; who is responsible for controlling personnel exposure with 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.

c. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel will receive a pre-job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre job briefing does not require documentation prior to initial entry.

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

a. Each entryway to such an area shall be conspicuously posted as a high radiation area and shall be provided with a locked

(continued)

5.7 High Radiation Area

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 (continued)

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.

b. Access to, and activities in, each such area shall be controlled by means of an RWP or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.

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.

d. Each individual or group entering such an area shall possess one of the following:

1. A radiation monitoring device that continuously integrates the radiation rates in the area and alarms when the device's dose alarm setpoint is reached, with an appropriate alarm setpoint, or

2. 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 with the means to communicate with and control every individual in the area, or

(continued)

5.7 High Radiation Area

~~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~~ ~~(continued)~~

~~3. 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 dose 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 and control every individual in the area.~~

~~4. In those cases where options (2) and (3), above, are impractical or determined to be inconsistent with the "As Low As is Reasonably Achievable" principle, a radiation monitoring device that continuously displays radiation dose rates in the area.~~

~~e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel will receive a pre job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre job briefing does not require documentation prior to initial entry.~~

~~(continued)~~

5.7 High Radiation Area

~~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~~ ~~(continued)~~

~~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.~~

6.11 RADIATION PROTECTION PROGRAM

6.11.1 Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained, and adhered to for all operations involving personnel radiation exposure.

Insert 3

6.12 HIGH RADIATION AREA

~~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:~~

~~6.12.1 High Radiation Areas with dose rates (deep dose equivalent) greater than 0.1 rem/hr and not exceeding 1.0 rem/hour (at 30 centimeters from the radiation sources or from any surface penetrated by the radiation):~~

~~a. Each accessible 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.~~

HIGH RADIATION AREA (Continued)

b. Access to, and activities in, each such area shall be controlled by means of a Radiation Work Permit (RWP) or equivalent that includes radiation protection instructions, job coverage and monitoring requirements. Radiological information (i.e., dose rates) is included on the radiation surveys associated with the RWP or equivalent.

c. Individuals qualified in radiation protection procedures and personnel continuously escorted by such individuals may be exempted from the requirement for an RWP or equivalent while performing their assigned duties provided that they are following plant radiation protection procedures for entry to, exit from, and work in such areas.

d. Each individual or group entering such an area shall be provided with or accompanied by one or more of the following:

1. A radiation monitoring device that continuously displays radiation dose rates in the area ("radiation monitoring and indicating device"), OR

2. A radiation monitoring device with the capability to display accumulated dose and which continuously integrates the radiation dose rates in the area and alarms when the device's dose alarm setpoint is reached ("alarming dosimeter"), OR

3. A radiation monitoring device with the capability to display accumulated dose and which 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 direct reading dosimeter AND:

a) A health physics qualified individual (i.e., qualified in radiation protection procedures) with a radiation dose rate monitoring device who is responsible for controlling personnel radiation exposure within the area, OR

b) Be under the surveillance, as specified in the RWP or equivalent, by means of closed circuit television, of a health physics qualified individual (i.e., qualified in radiation protection procedures), responsible for controlling personnel radiation exposure in the area.

e) Except for individuals qualified in radiation protection procedures, entry into such areas shall be made only after dose rates in the area have been established and entry personnel are knowledgeable of them.

HIGH RADIATION AREA (Continued)

6.12.2 In addition to the requirements of Section 6.12.1, High Radiation Areas with dose rates (deep dose equivalent) 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 rad/hr (at 1 meter from the radiation source or from any surface penetrated by the radiation source) accessible to personnel shall be controlled as follows:

a. Each accessible entryway to such an area shall be conspicously posted as a High Radiation Area and shall be provided with a locked door, gate, or guard that prevents unauthorized entry, and in addition:

1. All such door and gate keys shall be maintained under the administrative control of radiation protection supervision.

2. Doors and gates shall remain locked or guarded except during periods of personnel or equipment entry or exit.

b. Such individual areas that are within a larger area, such as containment, that is controlled as a High Radiation Area, where no enclosure exists for purpose of locking and where no enclosure can reasonable be constructed around the individual area need not be controlled by a locked door or gate, but shall be barricaded and conspicuously posted as a High Radiation Area, and a conspicuous, clearly visible flashing light shall be activated at the area as a warning device.

c. Each individual entering such an area shall be provided with or accompanied by one or more of the following:

1. A dose rate survey meter and a radiation monitoring device with the capability to display accumulated dose and an integrating alarm setpoint, OR

2. A radiation monitoring device with the capability to display accumulated dose and which continuously integrates the radiation dose rates in the area and alarms when the device's dose alarm setpoint is reached ("alarming dosimeter"), OR

3. A radiation monitoring device with the capability to display accumulated dose and which 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 AND with the means to communicate with the individuals in the area, OR

4. A direct reading dosimeter AND:

~~HIGH RADIATION AREA (Continued)~~

~~a) A health physics qualified individual (i.e., qualified in radiation protection procedures) with a radiation dose rate monitoring device who is responsible for controlling personnel radiation exposure within the area, OR~~

~~b) Be under the surveillance, as specified in the RWP or equivalent, by means of closed circuit television, of a health physics qualified individual (i.e., qualified in radiation protection procedures), responsible for controlling personnel radiation exposure in the area, and with the means to communicate with the individuals in the area.~~

6.13 PROCESS CONTROL PROGRAM (PCP)

6.13.1 Changes to the PCP:

a. Shall be documented with the following information:

1. Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and

6.11 RADIATION PROTECTION PROGRAM

6.11.1 Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained, and adhered to for all operations involving personnel radiation exposure.

Insert 3

6.12 HIGH RADIATION AREA

~~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:~~

~~6.12.1 High Radiation Areas with dose rates (deep dose equivalent) greater than 0.1 rem/hr and not exceeding 1.0 rem/hour (at 30 centimeters from the radiation sources or from any surface penetrated by the radiation):~~

~~a. Each accessible 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.~~

HIGH RADIATION AREA (Continued)

b. Access to, and activities in, each such area shall be controlled by means of a Radiation Work Permit (RWP) or equivalent that includes radiation protection instructions, job coverage and monitoring requirements. Radiological information (i.e., dose rates) is included on the radiation surveys associated with the RWP or equivalent.

c. Individuals qualified in radiation protection procedures and personnel continuously escorted by such individuals may be exempted from the requirement for an RWP or equivalent while performing their assigned duties provided that they are following plant radiation protection procedures for entry to, exit from, and work in such areas.

d. Each individual or group entering such an area shall be provided with or accompanied by one or more of the following:

1. A radiation monitoring device that continuously displays radiation dose rates in the area ("radiation monitoring and indicating device"), OR

2. A radiation monitoring device with the capability to display accumulated dose and which continuously integrates the radiation dose rates in the area and alarms when the device's dose alarm setpoint is reached ("alarming dosimeter"), OR

3. A radiation monitoring device with the capability to display accumulated dose and which 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 direct reading dosimeter AND:

a) A health physics qualified individual (i.e., qualified in radiation protection procedures) with a radiation dose rate monitoring device who is responsible for controlling personnel radiation exposure within the area, OR

b) Be under the surveillance, as specified in the RWP or equivalent, by means of closed circuit television, of a health physics qualified individual (i.e., qualified in radiation protection procedures), responsible for controlling personnel radiation exposure in the area.

e. Except for individuals qualified in radiation protection procedures, entry into such areas shall be made only after dose rates in the area have been established and entry personnel are knowledgeable of them.

HIGH RADIATION AREA (Continued)

6.12.2 In addition to the requirements of Section 6.12.1, High Radiation Areas with dose rates (deep dose equivalent) 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 rad/hr (at 1 meter from the radiation source or from any surface penetrated by the radiation source) accessible to personnel shall be controlled as follows:

a. Each accessible entryway to such an area shall be conspicously posted as a High Radiation Area and shall be provided with a locked door, gate, or guard that prevents unauthorized entry, and in addition:

1. All such door and gate keys shall be maintained under the administrative control of radiation protection supervision.

2. Doors and gates shall remain locked or guarded except during periods of personnel or equipment entry or exit.

b. Such individual areas that are within a larger area, such as containment, that is controlled as a High Radiation Area, where no enclosure exists for purpose of locking and where no enclosure can reasonable be constructed around the individual area need not be controlled by a locked door or gate, but shall be barricaded and conspicuously posted as a High Radiation Area, and a conspicuous, clearly visible flashing light shall be activated at the area as a warning device.

c. Each individual entering such an area shall be provided with or accompanied by one or more of the following:

1. A dose rate survey meter and a radiation monitoring device with the capability to display accumulated dose and an integrating alarm setpoint, OR

2. A radiation monitoring device with the capability to display accumulated dose and which continuously integrates the radiation dose rates in the area and alarms when the device's dose alarm setpoint is reached ("alarming dosimeter"), OR

3. A radiation monitoring device with the capability to display accumulated dose and which 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 AND with the means to communicate with the individuals in the area, OR

4. A direct reading dosimeter AND:

~~HIGH RADIATION AREA (Continued)~~

~~a) A health physics qualified individual (i.e., qualified in radiation protection procedures) with a radiation dose rate monitoring device who is responsible for controlling personnel radiation exposure within the area, OR~~

~~b) Be under the surveillance, as specified in the RWP or equivalent, by means of closed circuit television, of a health physics qualified individual (i.e., qualified in radiation protection procedures), responsible for controlling personnel radiation exposure in the area, and with the means to communicate with the individuals in the area.~~

6.13 PROCESS CONTROL PROGRAM (PCP)

6.13.1 Changes to the PCP:

a. Shall be documented with the following information:

1. Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and

Insert 2

6.7 High Radiation Area

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:

6.7.1 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

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.

b. Access to, and activities in, each such area shall be controlled by means of a 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.

c. Individuals qualified in radiation protection procedures and personnel continuously escorted by such individuals may be exempted from the requirement for an RWP or equivalent while performing their assigned duties provided that they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.

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 dose rates in the area;

(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.

e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel will receive a pre job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre job briefing does not require documentation prior to initial entry.

6.7.2 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

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 Station Shift Supervisor Nuclear, 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.

b. Access to, and activities in, each such area shall be controlled by means of an RWP or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.

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.

d. Each individual or group entering such an area shall possess one of the following:

1. 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

2. 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 with the means to communicate with and control every individual in the area, or

3. 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 dose 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 and control every individual in the area.

4. In those cases where options (2) and (3), above, are impractical or determined to be inconsistent with the "As Low As is Reasonably Achievable" principle, a radiation monitoring device that continuously displays radiation dose rates in the area.

e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel will receive a pre-job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre-job briefing does not require documentation prior to initial entry.

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.

5.0 ADMINISTRATIVE CONTROLS

5.7 High Radiation Area

Insert 1

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.

5.7.1 High Radiation Areas with Dose Rates not Exceeding 1.0 rem/hour (at 30 centimeters from the radiation sources or from any surface penetrated by the radiation)

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.

b. Access to, and activities in, each such area shall be controlled by means of a 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.

c. Individuals qualified in radiation protection procedures and personnel continuously escorted by such individuals may be exempted from the requirement for an RWP or equivalent while performing their assigned duties provided that they are following plant radiation protection procedures for entry to, exit from, and work in such areas.

d. Each individual or group entering such an area shall possess at least one of the following:

1. A radiation monitoring device that continuously displays radiation dose rates in the area ("radiation monitoring and indicating device").

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 ("alarming dosimeter"), with an appropriate alarm setpoint.

3. A radiation monitoring device that continuously transmits dose rate and cumulative dose to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area.

(continued)

5.7 High Radiation Area

5.7.1 High Radiation Areas with Dose Rates not Exceeding 1.0 rem/hour (at 30 centimeters from the radiation sources or from any surface penetrated by the radiation) (continued)

4. A self reading dosimeter and,

(a) Be under the surveillance, as specified in the RWP or equivalent, while in the area, of an individual at the work site, qualified in radiation protection procedures, equipped with a radiation monitoring and indicating device who is responsible for controlling personnel radiation exposure within the area, or

(b) 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.

e. Except for individuals qualified in radiation protection procedures, entry into such areas shall be made only after dose rates in the area have been established and entry personnel are knowledgeable of them.

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)

a. Each entryway to such an area shall be conspicuously posted as a high radiation area and shall be provided with a locked door, gate, or guard that prevents unauthorized entry, and in addition:

1. All such door and gate keys shall be maintained under the administrative control of the Station Shift Supervisor - Nuclear or a designee, or the radiation protection manager or a designee; and

2. Doors and gates shall remain locked or guarded except during periods of personnel entry or exit.

(continued)

5.7 High Radiation Area

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) (continued)

b. Access to, and activities in, each such area shall be controlled by means of an RWP or equivalent that includes specification of radiation dose rates in the immediate work areas(s) and other appropriate radiation protection equipment and measures.

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 following plant radiation protection procedures for entry to, exit from, and work in such areas.

d. Each individual (whether alone or in a group) entering such an area shall possess at least one of the following:

1. An alarming dosimeter with an appropriate alarm setpoint.

2. A radiation monitoring device that continuously transmits dose rate and cumulative dose to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area with the means to communicate with and control every individual in the area.

3. A self reading dosimeter and,

(a) 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 and indicating device who is responsible for controlling personnel exposure within the area, or

(continued)

5.7 High Radiation Area

~~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) (continued)~~

~~(b) 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 and control every individual in the area.~~

~~4. A radiation monitoring and indicating device in those cases where the options of Specifications 5.7.2.d.2 and 5.7.2.d.3, above, are impractical or determined to be inconsistent with the "As Low As is Reasonably Achievable" principle.~~

~~e. Except for individuals qualified in radiation protection procedures, entry into such areas shall be made only after dose rates in the area have been established and entry personnel are knowledgeable of them.~~

~~f. Such individual areas that are within a larger area that is controlled as a high radiation area, where no enclosure exists for 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, but shall be barricaded and conspicuously posted as a high radiation area, and a conspicuous, clearly visible flashing light shall be activated at the area as a warning device.~~

5.0 ADMINISTRATIVE CONTROLS

5.7 High Radiation Areas

Insert 1

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:

5.7.1 High Radiation Areas with Dose Rates not Exceeding 1.0 rem/hour (at 30 centimeters from the radiation sources or from any surface penetrated by the radiation):

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.

b. Access to, and activities in, each such area shall be controlled by means of a 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.

c. Individuals qualified in radiation protection procedures and personnel continuously escorted by such individuals may be exempted from the requirement for an RWP or equivalent while performing their assigned duties provided that they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.

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 ("radiation monitoring and indicating device"), 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 ("alarming dosimeter"), 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

(continued)

5.7 High Radiation Areas

5.7.1 High Radiation Areas with Dose Rates not Exceeding 1.0 rem/hour (at 30 centimeters from the radiation sources or from any surface penetrated by the radiation): (continued)

4. A self reading dosimeter (e.g., pocket ion 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 dose rates in the area; who is responsible for controlling personnel radiation 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.

e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel shall receive a pre job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre job briefing does not require documentation prior to initial entry.

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)

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.

(continued)

5.7 High Radiation Areas

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) (continued)

b. Access to, and activities in, each such area shall be controlled by means of an RWP or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.

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.

d. Each individual (whether alone or in a group) entering such an area shall possess:

1. A radiation monitoring device that continuously integrates the radiation rates in the area and alarms when the device's dose alarm setpoint is reached, with an appropriate alarm setpoint, or

2. 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 with the means to communicate with and control every individual in the area, or

3. A self reading dosimeter (e.g., pocket ion 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 continually displays radiation dose rates in the area; who is responsible for controlling personnel exposure within the area, or

(continued)

5.7 High Radiation Areas

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) (continued)

(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 and control every individual in the area.

4. In those cases where the options of Specifications 5.7.2.d.2 and 5.7.2.d.3, above, are impractical or determined to be inconsistent with the "As Low As is Reasonably Achievable" principle, a radiation monitoring device that continuously displays radiation dose rates in the area.

e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel shall receive a pre job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre job briefing does not require documentation prior to initial entry.

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.

5.0 ADMINISTRATIVE CONTROLS

5.7 High Radiation Areas

Insert 1

~~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:~~

~~5.7.1~~ ~~High Radiation Areas with Dose Rates not Exceeding 1.0 rem/hour (at 30 centimeters from the radiation sources or from any surface penetrated by the radiation):~~

~~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.~~

~~b.~~ ~~Access to, and activities in, each such area shall be controlled by means of a 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.~~

~~c.~~ ~~Individuals qualified in radiation protection procedures and personnel continuously escorted by such individuals may be exempted from the requirement for an RWP or equivalent while otherwise performing their assigned duties provided that they are following plant radiation protection procedures for entry to, exit from, and work in such areas.~~

~~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 ("radiation monitoring and indicating device"), 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 ("alarming dosimeter"), 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~~

~~(continued)~~

5.7 High Radiation Areas

5.7.1 High Radiation Areas with Dose Rates not Exceeding 1.0 rem/hour (at 30 centimeters from the radiation sources or from any surface penetrated by the radiation): (continued)

4. A self reading dosimeter (e.g., pocket ion 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 dose rates in the area; who is responsible for controlling personnel radiation 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.

e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel shall receive a pre job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre job briefing does not require documentation prior to initial entry.

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)

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.

(continued)

5.7 High Radiation Areas

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) (continued)

b. Access to, and activities in, each such area shall be controlled by means of an RWP or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.

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.

d. Each individual (whether alone or in a group) entering such an area shall possess:

1. A radiation monitoring device that continuously integrates the radiation rates in the area and alarms when the device's dose alarm setpoint is reached, with an appropriate alarm setpoint, or

2. 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 with the means to communicate with and control every individual in the area, or

3. A self-reading dosimeter (e.g., pocket ion 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 dose rates in the area; who is responsible for controlling personnel exposure within the area, or

(continued)

~~5.7 High Radiation Areas~~

~~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) (continued)~~

~~(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 and control every individual in the area.~~

~~4. In those cases where the options of Specifications 5.7.2.d.2 and 5.7.2.d.3, above, are impractical or determined to be inconsistent with the "As Low As is Reasonably Achievable" principle, a radiation monitoring device that continuously displays radiation dose rates in the area.~~

~~e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel shall receive a pre job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre job briefing does not require documentation prior to initial entry.~~

~~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.~~

5.0 ADMINISTRATIVE CONTROLS

5.7 High Radiation Area

Insert 1

~~5.7.1~~ ~~Pursuant to 10 CFR 20, paragraph 20.1601(c), in lieu of the requirements of 10 CFR 20.1601, each high radiation area, as defined in 10 CFR 20, in which the intensity of radiation is > 100 mrem/hr but < 1000 mrem/hr at 30 cm (12 in.), shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP) (or equivalent document). Individuals qualified in radiation protection procedures (e.g., radiation protection technicians) or personnel escorted by such individuals may be exempt from the RWP issuance requirement during the performance of their assigned duties, provided they are otherwise following plant radiation protection procedures for entry into high radiation areas.~~

~~Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:~~

~~a. A radiation monitoring device that continuously indicates the radiation dose rate in the area.~~

~~b. 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 rate levels in the area have been established and personnel are aware of them.~~

~~c. An individual qualified in radiation protection procedures with a radiation dose rate monitoring device, who is responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified in the RWP (or equivalent document).~~

~~5.7.2~~ ~~In addition to the requirements of Specification 5.7.1, areas accessible to personnel with radiation levels > 1000 mrem/hr at 30 cm (12 in.) from the radiation source or from any surface which the radiation penetrates shall require the following:~~

~~a. Doors shall be locked to prevent unauthorized entry and shall not prevent individuals from leaving the area. In place of locking the door, direct or electronic surveillance~~

~~(continued)~~

5.7 High Radiation Area

5.7.2 (continued)

that is capable of preventing unauthorized entry may be used. The keys shall be maintained under the administrative control of the Shift Engineer on duty or radiation protection supervision.

b. Personnel access and exposure control requirements of activities being performed within these areas shall be specified by an approved RWP (or equivalent document).

c. Each person entering the area shall be provided with an alarming radiation monitoring device that continuously integrates the radiation dose rate (such as an electronic dosimeter). Surveillance and radiation monitoring by a radiation protection technician may be substituted for an alarming dosimeter.

5.7.3 For individual high radiation areas with radiation levels of > 1000 mrem/hr at 30 cm (12 in.), accessible to personnel, that are located within large areas where no enclosure exists for purposes of locking, and where no enclosure can be reasonably constructed around the individual area, that individual area shall be barricaded and conspicuously posted, and a flashing light shall be activated as a warning device.

5.0 ADMINISTRATIVE CONTROLS

Insert 1

5.7 High Radiation Area

5.7.1 Pursuant to 10 CFR 20, paragraph 20.1601(a), in lieu of the requirements of 10 CFR 20.1601(c), each high radiation area, as defined in 10 CFR 20, in which the intensity of radiation is > 100 mrem/hr but ≤ 1000 mrem/hr at a distance of 30 cm, shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP). Individuals qualified in radiation protection procedures (e.g., radiation protection technicians) or personnel continuously escorted by such individuals may be exempt from the RWP issuance requirement during the performance of their assigned duties in high radiation areas with exposure rates ≤ 1000 mrem/hr, provided they are otherwise following plant radiation protection procedures for entry into such high radiation areas.

Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

a. A radiation monitoring device that continuously indicates the radiation dose rate in the area.

b. 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 rate levels in the area have been established and personnel are aware of them.

c. An individual qualified in radiation protection procedures with a radiation dose rate monitoring device, who is responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the radiation protection technician in the RWP.

~~5.7.2~~ ~~In addition to the requirements of Specification 5.7.1, areas with radiation levels > 1000 mrem/hr at a distance of 30 cm shall be provided with locked or continuously guarded doors to prevent unauthorized entry and the keys shall be maintained under the administrative control of the Shift Supervisor on duty or radiation protection supervision. Doors shall remain locked except during periods of access by personnel under an approved RWP that shall specify the dose rate levels in the immediate work areas and the maximum allowable stay times for individuals in those areas. In lieu of the stay time specification of the RWP, direct or remote (such as closed circuit TV cameras) continuous surveillance may be made by personnel qualified in radiation protection procedures to provide positive exposure control over the activities being performed within the area.~~

~~5.7.3~~ ~~In addition to the requirements of Specification 5.7.1, for individual high radiation areas with radiation levels of > 1000 mrem/hr at a distance of 30 cm, accessible to personnel, that are located within large areas such as reactor containment, where no enclosure exists for purposes of locking, or that cannot be continuously guarded, and where no enclosure can be reasonably constructed around the individual area, that individual area shall be barricaded and conspicuously posted, and a flashing light shall be activated as a warning device.~~

6.11 RADIATION PROTECTION PROGRAM

Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained and adhered to for all operations involving personnel radiation exposure.

6.12 HIGH RADIATION AREA

Insert 3

6.12.1 In lieu of the "control device" or "alarm signal" required by paragraph 20.1601 of 10 CFR 20:

a. Each High Radiation Area in which the intensity of radiation at 30 cm (11.8 in.) is greater than 100 mrem/hr. deep dose but less than 1000 mrem/hr shall be barricaded and conspicuously posted as a High Radiation Area, and personnel desiring entrance shall obtain a Radiation Work Permit (RWP). Any individual or group of individuals entering a High Radiation Area shall (a) use a continuously indicating dose rate monitoring device or (b) use a radiation dose rate integrating device which alarms at a pre set dose level (entry into such areas with this monitoring device may be made after the dose rate level in the area has been established and personnel have been made knowledgeable of them), or (c) assure that a radiological control technician provides positive control over activities within the area and periodic radiation surveillance with a dose rate monitoring instrument.

b. In addition to the requirements of specification 6.12.1.a:

1. Any area accessible to personnel where an individual could receive in any one hour a deep dose in excess of 1000 mrem at 30 cm (11.8 in.) but less than 500 rads at one meter (3.28 ft), from sources of radioactivity shall be locked or guarded to prevent unauthorized entry. The keys to these locked barricades shall be maintained under the administrative control of the respective Radiological Controls Supervisor.

2 For individual high radiation areas where an individual could receive in any one hour deep dose in excess of 1000 mrem at 30 cm (11.8 in.) but less than 500 rads at one meter (3.28 ft.), that are located within large areas such as reactor containment, where no enclosure exists for purposes of locking, and where no enclosure can be reasonably constructed around the individual area, that individual area shall be barricaded and conspicuously posted, and a flashing light shall be activated as a warning device.

The Radiation Work Permit is not required by Radiological Controls personnel during the performance of their assigned radiation protection duties provided they are following radiological control procedures for entry into High Radiation Areas.

Insert 1

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:

5.7.1 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 from the radiation source or from any surface penetrated by the radiation) shall be controlled as described below to prevent unauthorized entry.

a. Each 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.

b. Entrance shall be controlled by requiring issuance of a Radiation Work Permit (RWP) or equivalent that includes specification of radiation dose rate in the immediate work area(s) and other appropriate radiation protection equipment and measures.

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

1. A radiation monitoring device that continuously indicates the radiation dose rate in the area.

2. A radiation monitoring device that continuously integrates the radiation dose rate in the area and alarms when a preset setpoint is reached. Entry into high radiation areas with this monitoring device may be made after the dose rate in the area has been determined and personnel have been made knowledgeable of it.

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.

4. An individual qualified in radiation protection procedures equipped 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.

5.7.2 In addition to the requirements of Specification 5.7.1, high radiation areas in which an individual could receive a deep dose equivalent > 1.0 rem in one 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 entry.

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

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

c. Individual high radiation areas in which an individual could receive a deep dose equivalent > 1.0 rem in one hour (at 30 centimeters from the radiation source or from any surface penetrated by the radiation), accessible to personnel, that are located within larger 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 both of the following access controls:

    1. Each area shall be barricaded and conspicuously posted.

    2. A flashing light shall be activated as a warning device.

Insert 2

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:

6.7.1 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 from the radiation source or from any surface penetrated by the radiation) shall be controlled as described below to prevent unauthorized entry.

a. Each 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.

b. Entrance shall be controlled by requiring issuance of a Radiation Work Permit (RWP) or equivalent that includes specification of radiation dose rate in the immediate work area(s) and other appropriate radiation protection equipment and measures.

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

1. A radiation monitoring device that continuously indicates the radiation dose rate in the area.

2. A radiation monitoring device that continuously integrates the radiation dose rate in the area and alarms when a preset setpoint is reached. Entry into high radiation areas with this monitoring device may be made after the dose rate in the area has been determined and personnel have been made knowledgeable of it.

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.

4. An individual qualified in radiation protection procedures equipped 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.

6.7.2 In addition to the requirements of Specification 6.7.1, high radiation areas in which an individual could receive a deep dose equivalent > 1.0 rem in one 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 entry.

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

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

c. Individual high radiation areas in which an individual could receive a deep dose equivalent > 1.0 rem in one hour (at 30 centimeters from the radiation source or from any surface penetrated by the radiation), accessible to personnel, that are located within larger 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 both of the following access controls:

    1. Each area shall be barricaded and conspicuously posted.

    2. A flashing light shall be activated as a warning device.

Insert 3

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:

6.12.1 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 from the radiation source or from any surface penetrated by the radiation) shall be controlled as described below to prevent unauthorized entry.

a. Each 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.

b. Entrance shall be controlled by requiring issuance of a Radiation Work Permit (RWP) or equivalent that includes specification of radiation dose rate in the immediate work area(s) and other appropriate radiation protection equipment and measures.

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

1. A radiation monitoring device that continuously indicates the radiation dose rate in the area.

2. A radiation monitoring device that continuously integrates the radiation dose rate in the area and alarms when a preset setpoint is reached. Entry into high radiation areas with this monitoring device may be made after the dose rate in the area has been determined and personnel have been made knowledgeable of it.

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.

4. An individual qualified in radiation protection procedures equipped 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.

6.12.2 In addition to the requirements of Specification 6.12.1, high radiation areas in which an individual could receive a deep dose equivalent > 1.0 rem in one 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 entry.

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

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

c. Individual high radiation areas in which an individual could receive a deep dose equivalent > 1.0 rem in one hour (at 30 centimeters from the radiation source or from any surface penetrated by the radiation), accessible to personnel, that are located within larger 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 both of the following access controls:

    1. Each area shall be barricaded and conspicuously posted.

    2. A flashing light shall be activated as a warning device.