
REVISED RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

APR1400 Design Certification

Korea Electric Power Corporation / Korea Hydro & Nuclear Power Co., LTD

Docket No. 52-046

RAI No.: 235-8275
SRP Section: 12.03 – 12.04 Radiation Protection Design Features
Application Section: 12.3 – 12.4
Date of RAI Issue: 10/07/2015

Question No. 12.03-34

10 CFR 20.1602 requires that in addition to the requirements in 10 CFR 20.1601, the licensee shall institute additional measures to ensure that an individual is not able to gain unauthorized or inadvertent access to areas in which radiation levels could be encountered at 500 rads or more in 1 hour at 1 meter from a radiation source or any surface through which the radiation penetrates.

SRP 12.3-12.4 indicates that the staff will review the design features provided to control access to radiologically restricted areas (including potentially very high radiation areas) and that the staff's review will emphasize areas potentially greater than 100 Rad/hour.

In addition SRP 12.5 indicates that the staff will review the description of physical and administrative measures for controlling access to, and work within, radiation areas, high-radiation areas, and very high radiation areas.

In FSAR Table 12.3-5, the applicant lists areas in the plant that could potentially be greater than 100 Rad/hour. Many of these areas are also very high radiation areas (greater than 500 Rad/hour), as indicated in the normal radiation zone figures in FSAR Section 12.3.

While the applicant specifies design features to control access to a few of these significant radiation areas in FSAR Section 12.3.2.3, the applicant does not discuss design features to control access to the other areas. Please update the FSAR to discuss design features to control access for all areas potentially greater than 100 Rad/hour.

Response – (Rev. 3)

As described in DCD Subsection 12.3.2.3 and Table 12.3-5, the APR1400 design contains areas identified to be high radiation areas (areas potentially greater than 100 rad/hr (1 Gy/hr)) and very high radiation areas (areas potentially greater than 500 rad/hr (5 Gy/hr)) which are provided with access control features to prevent inadvertent high radiation exposure to plant

personnel. DCD Subsection 12.3.2.3 addresses the shielding design features for radiation protection, and a Subsection 12.3.2.4 will be added to describe the design features provided for access control for the rooms and areas listed in Table 12.3-5 as indicated in Attachment 1.

Further, NRC staff provided feedback on September 20, 2016 regarding the classification of the Instrument Calibration Facility (ICF) as a high radiation level irradiator, which would subject it to the requirements of 10 CFR Part 36. KHNP performed a review of the calibration experiences for high radiation instruments used in the Korean nuclear industry. In several new Korean domestic nuclear power plants, including Shin-Kori 1&2 and 3&4, and Shin-Wolsong 1&2, an offsite facility was utilized as the ICF. Based on these examples, the use of the ICF room (063-P73) for the APR1400 design certification has been removed from the standard design application. A COL item will be added for the COL applicant to provide the capability, either on- or off-site, for the calibration of the portable radiation instruments as required for plant operation. KHNP has redesignated the former ICF room (063-P73) for "Future Use", and remove all ICF related contents from the certification application. The corresponding sections in the DCD will be revised, and a new COL item will be added, as indicated in Attachment 2. Specifically, the changes associated with the removal of ICF from standard design certification are as follows:

- a. The response to RAI 8496 Question 12.03-49, Rev. 3 provided documentation for the removal of the ICF. The ICF has been removed from Tier 1 DCD Table 2.7.6.5-1; Radiation monitor (RE-286) for ICF has been removed from Tier 2 DCD Subsection 12.3.4.1.5 sub-item (b), Tier 2 Table 12.3-6; and Tier 2 DCD Figure 11.5-2R. The cubicle in Figure 11.5-2R has been designated for "FUTURE USE". The original response to the RAI was also revised to remove references to ICF.
- b. The response to this RAI (RAI 235-8275-Question No. 12.03-34) also includes documentation of this change as follows:
 - 1) A COL item (12.3 (6)) has been added to Tier 2 DCD subsection 12.3.6 and Tier 2 DCD Table 1.8-2 (Page 20 of 29).
 - 2) The packaged air condition unit (PACU) and fan designated for ICF cubicle use in Tier 2 DCD Table 9.4.7-1 (Page 4 of 5 and Page 5 of 5, respectively) has been deleted.
 - 3) The cubicle name in Tier 2 Table 12.3-4 (Page 6 of 7) has been changed to "Future Use". The minimum shield wall thicknesses associated with this cubicle are not changed.
 - 4) ICF is removed from Tier 2 DCD Table 12.3-5 (Page 2 of 2). The cubicle is designated for "Future Use"; the cubicle features, including VHRA and locked door, remain unchanged.
 - 5) Note 4 to Tier 2 DCD Table 12.3-5 (Page 2 of 2) has been revised to indicated that the COL applicant is to determine the use of cubicle 063-P73.
 - 6) The cubicle originally designated for ICF use in Tier 2 DCD Figure 1.2-24 General Arrangement Compound Building EI 63' 0" has been revised for "Future Use".

- 7) The cubicle name in the radiation zone map in Tier 2 DCD Figure 12.3-10 has been changed to "Future Use". The cubicle remains in radiation zone 5.

KHNP conducted a comprehensive review of the DCD and related RAI responses for the removal of the ICF from standard design certification. KHNP believes that the DCD is fully consistent with regard to the removal of ICF.

Impact on DCD

DCD Tier 2 Subsection 12.3.2.4 will be added, and Table 12.3-5 will be modified as indicated in the Attachment 1. DCD Tier 2 Subsection 12.3.6, Tables 1.8-2, 9.4.7-1, 12.3-4, 12.3-5, Figures 1.2-24, 12.3-10 will be revised as indicated in the Attachment 2.

Impact on PRA

There is no impact on the PRA.

Impact on Technical Specifications

There is no impact on the Technical Specifications.

Impact on Technical/Topical/Environmental Reports

There is no impact on any Technical, Topical, or Environment Report.

pipe chase. The resin transfer lines are also provided with a flushing capability to minimize the potential for hot spots in the piping.

The ICI chase is potentially a high-radiation area (greater than 1 Gy/hr) during ICI withdrawal. Stringent access control is provided to this area during movement of the ICI. A lockable access door is provided with a warning light. During withdrawal of the ICI, the warning light illuminates, providing indication that the ICI is being moved. An area radiation monitor is located in the ICI chase to provide indication of radiation levels and to alarm the personnel when the ICI is being withdrawn. Emergency egress from the area is also provided from the ICI chase.

Components that handle a significant amount of radioactive materials, such as LWMS floor drain tanks and equipment waste tanks, are located in shielded cubicles separated from the pump and valve galleries that are provided with labyrinths for access to the galleries. This design approach minimizes radiation streaming and scattering but permits inspection and maintenance access and removal of smaller items such as pumps, valves, and instruments for repair in lower-radiation areas. This design approach meets the requirements of NRC RG 8.8 2.b(4). The plant shielding is designed not only to maintain personnel occupational exposure ALARA, but also to maintain exposure to the general public ALARA.

The APR1400 shielding design has target dose rates that are below the limits for radiation zone designations provided in Table 12.3-2 to provide a sufficient margin in maintaining radiation exposure to plant personnel and the public ALARA.

12.3.3 Ventilation

The spread of airborne contamination within the plant is minimized by the design of the plant HVAC systems to provide airflow from areas of lower potential for airborne contamination to areas of greater potential for airborne contamination. For building compartments with the potential for contamination, the exhaust from the areas is designed with pressure and flow balances to minimize the amount of uncontrolled exfiltration from these areas. These design features provide reasonable assurance that the average concentration of radioactive material in the air in the areas that are normally occupied is less than the small fraction of DAC prescribed in 10 CFR Part 20 Appendix B. Therefore,

DCD subsection 12.3.2.4 will be added to include "A" in next page

“A”

12.3.2.4 Access Control to High Radiation and Very High Radiation Areas.

The high radiation and very high radiation areas, areas potentially greater than 1 Gy/hr and 5Gy/hr, respectively, as identified in Table 12.3-5, which are located in the containment building have multiple features of access control to prevent inadvertent radiation exposure to plant personnel. These very high radiation areas include the ICI cavity, the hold-up volume tank, the core debris chamber, the reactor cavity, the steam generator cavity, and the reactor drain tank room. Access to the containment building is strictly controlled and built-in design features to prevent inadvertent access include a secure air lock as the only point of entry for personnel, the door to which is locked and equipped with a security alarm. In addition to the access control provided at the point of entry into the containment building, separate barriers with individual locked doors are provided for each of these very high radiation areas in accordance with the guidance of RG 8.38 (Reference 18).

The high radiation areas on Elevations 78' and 86' of the auxiliary building are located within a block where thick concrete walls are provided as shielding to the surrounding areas. There are no doors provided to allow access to the high radiation cubicles within this block. These cubicles include the pre-holdup ion exchanger pit, the purification ion exchanger pit, the purification filter pit, and the filter area. This block of filters and ion exchangers can only be accessed from the elevation 100' level via manway, which are locked at all times and are further under administrative controls to prevent unauthorized access. Also on Elevations 100' and 120' of the auxiliary building is the volume control tank cubicle, which is a potentially high radiation area. This cubicle, which is not normally accessed by personnel, is locked and can only be opened by key from the outside.

The areas listed in Table 12.3-5 at the Elevation 120' level of the auxiliary building, which are high radiation areas during refueling operations, include the transfer tube inspection area, the cask loading pit, the refueling canal, and the spent fuel pool. The cask loading pit and refueling canal, and the spent fuel pool do not allow for inadvertent personnel access as these areas do not have an entrance for personal entry, and since the transfer tube access area is locked normally, the transfer tube inspection area cannot be accessed.

The areas listed in Table 12.3-5 as high and very high radiation areas within the compound building are all provided with access control in the form of locked doors. These rooms are provided with a latch bolt operated by key from the outside or by a rotating inside knob/lever. The two exceptions to this form of access control are the hot pipe way on Elevation 77' and the charcoal delay bed room. The hot pipe way and the charcoal delay bed room are not provided with a door for personnel access. The only accesses to these areas are via the hatches provided on Elevation 85' and 120', respectively. Since these hatches are intended for maintenances or equipment removal, and are equipped with heavy concrete blocks, unauthorized access is not possible.

Table 12.3-5 (1 of 2)

Areas Potentially Greater than 1 Gy/hr⁽¹⁾

Auxiliary and Containment Building El. 55ft; see Figure 12.3-1

Area	Coordinates
ICI Cavity	AF-AG, 18-19

Auxiliary and Containment Building El. 78ft; see figures 12.3-2 and 3

Area	Coordinates
Hold-Up Volume Tank	AE-AG, 20-21
Core Debris Chamber	AE-AG, 17-18
Pre-Holdup Ion Exchanger Pit	AC-AD, 23-24
Purification Ion Exchanger Pit	AB-AC, 23-24
Purification Filter Pit	AC-AD, 24-25
Filter Area	AA-AB, 24-25

Auxiliary and Containment Building El. 100ft; see Figure 12.3-4

Area	Coordinates
Reactor Cavity	AE-AG, 18-20
Steam Generator Cavity	AD-AE & AG-AH, 19
Reactor Drain Tank Room	AE-AF, 16-17
Volume Control Tank Room	AD-AE, 24-25

Auxiliary and Reactor Containment Building El. 120.0 ft; see Figure 12.3-5

Area	Coordinates
Refueling Pool Area	AE-AG, 17-21
Fuel Transfer Tube ⁽²⁾	AF-AG, 21-23
Spent Fuel Pool ⁽²⁾	AG-AH, 23-25
Cask Loading Pit ⁽²⁾	AH-AI, 23-24
Refueling Canal ⁽²⁾	AF-AG, 23-25

(1) During normal operating conditions and AOOs

(2) Only when fuel is in the area

Replace this table with "B"

APR1400 DCD TIER 2

RAI 235-8275 - Question 12.03-34_Rev.1

Table 12.3-5 (2 of 2)

Compound Building El. 63ft; see Figure 12.3-10

Area	Coordinates
GRS Header Drain Tank Room	PB-PC, 38-39
Spent Resin Long Term Storage Tank Room	PC-PD, 38-39
Future Use	PD-PE, 38-39
Hot Pipe Chase	PI-PJ, 38-39

Compound Building El. 77ft; see Figure 12.3-11

Area	Coordinates
Hot Pipe Way	PA-PI, 33-39

Compound Building El. 85ft; see Figure 12.3-12

Area	Coordinates
R/O Membrane Module & Valve Skid Room	PI-PJ, 37-39

Compound Building El. 100ft; see Figure 12.3-13

Area	Coordinates
Charcoal Delay Bed Room	PB-PC, 38-39
Spent Filter Drum Storage Area	PI-PJ, 38-39
Truck Bay ⁽³⁾	PF-PG, 37-39
Future Extension Area ⁽³⁾	PE-PF, 37-39

(3) Only during transfer and drumming of spent filter and spent resin

Replace this table with "B"

B

Table 12.3-5 (1 of 2)

Areas Potentially Greater than 1 Gy/hr⁽¹⁾

Auxiliary and Containment Building El. 55ft; see Figure 12.3-1

Area	Coordinates	HRA / VHRA ⁽³⁾	Access Control
ICI Cavity	AF-AG, 18-19	VHRA	Locked Door

Auxiliary and Containment Building El. 78ft; see figures 12.3-2 and 3

Area	Coordinates	HRA / VHRA	Access Control
Hold-Up Volume Tank	AE-AG, 20-21	HRA	Locked Door
Core Debris Chamber VH	AE-AG, 17-18	VHRA	Locked Door
Pre-Holdup Ion Exchanger Pit	AC-AD, 23-24	HRA	Hatch
Purification Ion Exchanger Pit VH	AB-AC, 23-24	VHRA	Hatch
Purification Filter Pit VH	AC-AD, 24-25	VHRA	Hatch
Filter Cartridge Storage VH	AA-AB, 24-25	VHRA	Hatch

Auxiliary and Containment Building El. 100ft; see Figure 12.3-4

Area	Coordinates	HRA / VHRA	Access Control
Reactor Cavity VH	AE-AG, 18-20	VHRA	Locked Door
Steam Generator Cavity	AD-AE & AG-AH, 19	HRA	Locked Door
Reactor Drain Tank Room	AE-AF, 16-17	HRA	Locked Door
Volume Control Tank Room VH	AD-AE, 24-25	VHRA	Locked Door

Auxiliary and Reactor Containment Building El. 120.0 ft; see Figure 12.3-5

Area	Coordinates	HRA / VHRA	Access Control
Refueling Pool Area ⁽²⁾	AE-AG, 17-21	VHRA	No Entrance
Transfer Tube Inspection Area ⁽²⁾	AF-AG, 21-23	VHRA	Locked Door
Spent Fuel Pool ⁽²⁾	AG-AH, 23-25	VHRA	No Entrance
Cask Loading Pit ⁽²⁾	AH-AI, 23-24	VHRA	No Entrance
Refueling Canal ⁽²⁾	AF-AG, 23-25	VHRA	No Entrance

(1) During normal operating conditions and AOOs

(2) Only when fuel is in the area

(3) HRA : High Radiation Area,
VHRA : Very High Radiation Area (Greater than 5 Gy/hr)

B

Table 12.3-5 (2 of 2)

Compound Building El. 63ft; see Figure 12.3-10

Area	Coordinates	HRA / VHRA	Access Control
GRS Header Drain Tank Room	PB-PC, 38-39	HRA	Locked Door
Spent Resin Long Term Storage Tank Room	PC-PD, 38-39	VHRA	Locked Door
Future Use	PD-PE, 38-39	VHRA	Locked Door
Hot Pipe Chase	PI-PJ, 38-39	HRA	Locked Door
Instrument Calibrator Facility ⁽⁴⁾	PB-PC, 32-33	VHRA	Locked Door

Compound Building El. 77ft; see Figure 12.3-11

Area	Coordinates	HRA / VHRA	Access Control
Hot Pipe Way	PA-PI, 33-39	HRA	Hatch

Compound Building El. 85ft; see Figure 12.3-12

Area	Coordinates	HRA / VHRA	Access Control
R/O Membrane Module & Valve Skid Room	PI-PJ, 37-39	HRA	Locked Door

Compound Building El. 100ft; see Figure 12.3-13

Area	Coordinates	HRA / VHRA	Access Control
Charcoal Delay Bed Room	PB-PC, 38-39	VHRA	Hatch
Spent Filter Drum Storage Area	PI-PJ, 38-39	VHRA	Locked Door
Truck Bay ⁽⁵⁾	PF-PG, 37-39	HRA	Locked Door
Future Extension Area ⁽⁵⁾	PE-PF, 37-39	HRA	Locked Door

(4) Only when the calibration is performed

(5) Only during transfer and drumming of spent filter and spent resin

APR1400 DCD TIER 2

RAI 235-8275 - Question 12.03-34_Rev.3

COL 12.3(3) The COL applicant is to provide the material composition and shielding properties of the following doors/hatches, and these thicknesses equivalent to the minimum required concrete shield thicknesses.

- Personnel Air Lock between Containment Annulus Area (100-C01) and Personnel Air Lock Entrance (100-A14A)
- Personnel Air Lock between Operating Area (156-C01) and Containment Entrance Area (156-A04B)
- Equipment Hatch between Operating Area (156-C01) and Equipment Hatch Access Room (156-A10A)
- Door between Equipment Hatch Access Room (156-A10A) and the building exterior
- Doors between Truck Bay (100-P08) and the building exterior

Also, the COL applicant is to provide the service life of these doors/hatches and perform periodic in-service inspection and maintenance for these doors/hatches to provide reasonable assurance of functionality throughout the life of the plant.

COL 12.3(4) The COL applicant is to provide portable instruments and the associated training and procedures in accordance with 10 CFR 50.34(f)(2)(xxvii) and the criteria in Item III.D.3.3 of NUREG-0737 as well as the guidelines of RG 8.8.

COL 12.3(5) The COL applicant is to determine the ARM setpoints for WARN, ALARM, and the containment purge isolation and fuel handling area emergency ventilation actuation signals, based on the site-specific conditions and operational requirements.

12.3.7 References

1. Regulatory Guide 8.8, "Information Relevant to Ensuring that Occupational Radiation Exposures at Nuclear Power Stations will be ALARA," Rev. 3, U.S. Nuclear Regulatory Commission, June 1978.

COL 12.3 (6) The COL applicant is to determine the purpose and use of the room (063-P73). The access control for this room shall be changed accordingly in compliance with the guidance in RG 8.38. In addition, COL applicant is to specify any necessary radiation monitoring requirements, and any additional necessary design features and controls to ensure compliance with applicable regulations, including 10 CFR Part 20 and 10 CFR Part 36.

APR1400 DCD TIER 2

RAI 235-8275 - Question 12.03-34_Rev.3

Table 1.8-2 (26 of 38)

Item No.	Description
COL 11.5(8)	The COL applicant is to develop detailed locations, tubing installations, and provide the sampling method including the sampling frequency and time to acquire representative sampling.
COL 11.5(9)	The COL applicant is to determine the monitor type, safety class, measuring range, and installed location of the RE-165 and RE-166.
COL 11.5(10)	The COL applicant is to provide operational procedures and maintenance programs related to leak detection and contamination control.
COL 12.1(1)	The COL applicant is to provide the organizational structure to effectively implement the radiation protection policy, training, and reviews consistent with operational and maintenance requirements, while satisfying the applicable regulations and Regulatory Guides including NRC RGs 1.33, 1.8, 8.8, and 8.10.
COL 12.1(2)	The COL applicant is to describe the operational radiation protection program to provide reasonable assurance that occupational and public radiation exposures are ALARA.
COL 12.1(3)	The COL applicant is to describe how the plant follows the guidance provided in NRC RGs 8.2, 8.4, 8.7, 8.9, 8.13, 8.15, 8.20, 8.25, 8.26, 8.27, 8.28, 8.29, 8.34, 8.35, 8.36, and 8.38.
COL 12.2(1)	The COL applicant is to provide any additional contained radiation sources, such as instrument calibration radiation sources, that are not identified in Subsection 12.2.1.
COL 12.3(1)	The COL applicant is to determine the areas that will require either electro or mechanical polishing.
COL 12.3(2)	The COL applicant is to establish how the water chemistry pH control reduces radiation fields.
COL 12.3(3)	<p>The COL applicant is to provide the material composition and shielding properties of the following doors/hatches, and these thicknesses equivalent to the minimum required concrete shield thicknesses.</p> <ul style="list-style-type: none"> - Personnel Air Lock between Containment Annulus Area (100-C01) and Personnel Air Lock Entrance (100-A14A) - Personnel Air Lock between Operating Area (156-C01) and Containment Entrance Area (156-A04B) - Equipment Hatch between Operating Area (156-C01) and Equipment Hatch Access Room (156-A10A) - Door between Equipment Hatch Access Room (156-A10A) and the building exterior - Doors between Truck Bay (100-P08) and the building exterior <p>Also, the COL applicant is to provide the service life of these doors/hatches and perform periodic in-service inspection and maintenance for these doors/hatches to provide reasonable assurance of functionality throughout the life of the plant.</p>
COL 12.3(4)	The COL applicant is to provide portable instruments and the associated training and procedures in accordance with 10 CFR 50.34(f)(2)(xxvii) and the criteria in Item III.D.3.3 of NUREG-0737 as well as the guidelines of RG 8.8.
COL 12.3(5)	The COL applicant is to determine the ARM setpoints for WARN, ALARM, and the containment purge isolation and fuel handling area emergency ventilation actuation signals, based on the site-specific conditions and operational requirements.

Add

COL 12.3(6) The COL applicant is to determine the purpose and use of the room (063-P73). The access control for this room shall be changed accordingly in compliance with the guidance in RG 8.38. In addition, COL applicant is to specify any necessary radiation monitoring requirements, and any additional necessary design features and controls to ensure compliance with applicable regulations, including 10 CFR Part 20 and 10 CFR Part 36.

APR1400 DCD TIER 2

Table 9.4.7-1 (4 of 5)

7.3 Fan

Quantity per ACU:	1
Type:	Centrifugal
Air flow rate, cmh (cfm):	6,630 (3,900)

8 Compound building chiller room exhaust fan

Quantity:	1
Type:	Centrifugal
Air flow rate, cmh (cfm):	6,970 (4,100)
Seismic Category:	III

9 Packaged air conditioning units (PACUs)

Quantity:	1 at 100 % (1 per room)
Type:	Draw-through
Seismic Category:	III

The PACUs consist of the following components:

9.1 Prefilter (see Table 9.4.1-3)

9.2 Cooling coil

Cooling Coil	Quantity per PACU	Type
Telecommunication equipment room PACU	1	Direct expansion
CCS cabinet room PACU	1	Direct expansion
Calibration office PACU	1	Direct expansion
Instrument calibration facility room PACU	1	Direct expansion
Sample counting room PACU	1	Direct expansion

Deleted

APR1400 DCD TIER 2

RAI 235-8275 - Question 12.03-34_Rev.3

Table 9.4.7-1 (5 of 5)

9.3 Fan

Fan	Quantity per PACU	Type	Air Flow Rate, cmh (cfm)
Telecommunication Equipment Room PACU	1	Centrifugal	2,550 (1,500)
CCS cabinet room PACU	1	Centrifugal	3,910 (2,300)
Calibration office PACU	1	Centrifugal	850 (500)
Instrument calibration facility room PACU	1	Centrifugal	1,700 (1,000)
Sample counting room PACU	1	Centrifugal	850 (500)

10 Cubicle cooler (CC)

Type: Draw-through

Each CCs consists of the following components:

Cubicle Cooler	Cooling Coil		Fan		Seismic Category	Safety Designation ⁽¹⁾
	Type	Capacity, kcal/hr (Btu/hr)	Type	Air Flow Rate, cmh (cfm)		
Electric equipment room CC (HV05)	Chilled Water	10,836 (43,000)	Centrifugal	2,210 (1,300)	III	NSR
Electric equipment room CC (HV06)	Chilled Water	34,524 (137,000)	Centrifugal	6,800 (4,000)	III	NSR
Electric equipment room CC (HV07)	Chilled Water	50,652 (201,000)	Centrifugal	10,200 (6,000)	III	NSR

(1) SR = safety-related

NSR = non-safety-related

APR1400 DCD TIER 2

RAI 235-8275 - Question 12.03-34_Rev.3

Table 12.3-4 (6 of 10)

Room Number	Room Name	Minimum Required Shield Thickness (inches)					
		North	South	East	West	Floor	Ceiling
<u>Compound Building (cont.)</u>							
063-P37	Monitor Tank Room	10	18	11	18	Ground	10
063-P38	PSS-Solidification & Drum Conveyer Room	17	24	24	21	Ground	14
063-P39	Spent Resin Long-term Storage Tank Sump Pump Room	18	20	18	21	Ground	18
063-P40	Concentrate Pump Room	27	24	20	16	Ground	19
063-P41	Concentrate Holding Tank Room	21	27	33	28	Ground	10
063-P42	RO Feed Pump Room	10	10	28	16	Ground	24
063-P43	IX Feed Pump Room	16	10	16	10	Ground	24
063-P44	IX Feed Tank Room	14	16	11	10	Ground	23
063-P47	CTS HEPA Vacuum Skid Room	24	10	21	10	Ground	10
063-P48	CTS Dryer Skid Room	31	24	17	21	Ground	15
063-P49	CTS Vacuum Skid Room	10	10	21	10	Ground	18
063-P54	Monitor Tank Pump Room	10	10	10	10	Ground	14
063-P73	Instrument Calibrator Facility	36	43	18	48	Ground	36
085-P01	Waste Gas Dryer Skid Room	17	25	25	19	17	22
085-P02	Waste Gas Dryer Skid Room	11	17	10	19	17	22
085-P03	Valve Room	48	11	30	26	18	36
085-P04	Charcoal Guard Bed Room	26	26	34	18	10	23
085-P06	Valve Room	19	26	36	30	19	27
085-P07	Valve Room	27	24	30	30	14	24
085-P08	Valve Room	24	19	22	24	19	24
085-P15	Valve Room	10	21	21	18	10	23
085-P16	Valve Room	10	22	18	19	10	22
085-P17	Valve Room	10	10	10	14	10	17
085-P20	Valve Room	16	16	16	16	10	16
085-P21	Charcoal Guard Bed Room	26	26	18	34	10	23
085-P31	Primary Sampling Room	10	10	10	10	10	10

Future Use

APR1400 DCD TIER 2

RAI 235-8275 - Question 12.03-34_Rev.3

Table 12.3-5 (2 of 2)

Compound Building El. 63 ft; See Figure 12.3-10.

Area	Coordinates	HRA / VHRA	Access Control
GRS Header Drain Tank Room	PB-PC, 38-39	HRA	Locked Door
Spent Resin Long Term Storage Tank Room	PC-PD, 38-39	VHRA	Locked Door
Future Use	PD-PE, 38-39	VHRA	Locked Door
Hot Pipe Chase	PI-PJ, 38-39	HRA	Locked Door
Instrument Calibrator Facility ⁽⁴⁾	PB-PC, 32-33	VHRA	Locked Door

Future Use

Add superscript "(4)"

Compound Building El. 77 ft; See Figure 12.3-11.

Area	Coordinates	HRA / VHRA	Access Control
Hot Pipe Way	PA-PI, 33-39	HRA	Hatch

Compound Building El. 85 ft; See Figure 12.3-12.

Area	Coordinates	HRA / VHRA	Access Control
R/O Membrane Module & Valve Skid Room	PI-PJ, 37-39	HRA	Locked Door

Compound Building El. 100 ft; See Figure 12.3-13.

Area	Coordinates	HRA / VHRA	Access Control
Charcoal Delay Bed Room	PB-PC, 38-39	VHRA	Hatch
Spent Filter Drum Storage Area	PI-PJ, 38-39	VHRA	Locked Door
Truck Bay ⁽⁵⁾	PF-PG, 37-39	HRA	Locked Door
Future Extension Area ⁽⁵⁾	PE-PF, 37-39	HRA	Locked Door

(4) ~~Only when the calibration is performed~~

(5) Only during transfer and drumming of spent filter and spent resin

COL applicant is to determine the purpose and use of the room (063-P73). The access control for this room shall be changed accordingly in compliance with the guidance in RG 8.38. In addition, COL applicant is to specify any necessary radiation monitoring requirements, and any additional necessary design features and controls to ensure compliance with applicable regulations, including 10 CFR Part 20 and 10 CFR Part 36. (COL 12.3 (6)).

APR1400 DCD TIER 2

Security-Related Information - Withhold Under 10 CFR 2.390

Figure 1.2-24 General Arrangement Compound Building El. 63'-0"

APR1400 DCD TIER 2

Security-Related Information - Withhold Under 10 CFR 2.390

Figure 12.3-10 Radiation Zones (Normal) Compound Building El. 63'-0"