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.:	**174-8211**
SRP Section:	**02.03.04 - Short Term Atmospheric Dispersion Estimates for Accident Releases**
Application Section:	**02.03.04**
Date of RAI Issue:	**08/26/2015**

Question No. 02.03.04-5

The Staff considered the Applicant's responses to RAI Question Nos. 02.03.04-2 and 02.03.04-3 (see ML15132A599 and ML15132A600, dated May 12, 2015). These questions pertained to the accident-related atmospheric dispersion modeling analyses in the Revision 0 submittal of Section 2.3.4 of the Korea Hydro and Nuclear Power Co., Ltd. (KHNP) application for Design Certification (DC) of the APR1400 Standard Design (ML15006A059).

In particular, the items under RAI Question No. 02.03.04-2 sought clarification, through revision of Tier 2, DCD Figure 2.3-1, of several air intake and potential radiological release locations to be considered in the atmospheric dispersion modeling analyses in Section 2.3.4 using the ARCON96 dispersion model. Those results provide direct input to onsite Control Room (CR) and Technical Support Center (TSC) dose calculations for design-basis accidents in Chapter 15. RAI Question 02.03.04-3 requested verification and clarification of the relationship between the Applicant's dispersion analyses to develop CR and TSC site parameter values and the use of meteorological data from the existing Prairie Island nuclear generating plant.

SRP Acceptance Criterion (6) under Subsection II (Acceptance Criteria) of NUREG-0800 for Section 2.3.4 calls for "a site plan drawn to scale….showing True North and potential atmospheric release pathways, control room intake, and unfiltered inleakage pathways" to be provided. The Applicant's responses to the items under RAI Question No. 02.03.04-2 provided the requested clarifications including revisions to Tier 2, DCD Figure 2.3-1.

Tier 2, DCD Table 2.3-13 (Pages 1 to 6 of 6), as revised, list design input parameters to the ARCON96 dispersion modeling and include various source-receptor pairs. The resulting site parameter relative concentration (X/Q) values are listed in Tier 2, DCD Tables 2.3-2 through 2.3-12. However, it does not appear that all possible source-receptor combinations shown in Tier 2, DCD Figure 2.3-1 have been considered.

Further, Tier 2, DCD Figure 2.3-1 is referenced to Plant North. The Staff understands this to be appropriate at the DC stage and that a site-specific orientation of the layout will be determined by the Combined License (COL) (under 10 CFR Part 52) or Operating License (OL) (under 10 CFR Part 50) applicant. Nevertheless, source receptor combinations not modeled in the DCD may apply to some COL or OL applicants and could represent the controlling conditions for a given accident scenario (e.g., based on worse dispersion conditions for a given source-receptor combination and orientation that is farther apart). Therefore, the Applicant should address the following technical issues:

(1) Identify the source-receptor pairs that have not been evaluated and, given the above, provide technical justification for not having done so for each. If additional modeling is necessary, revise the affected site parameter values, text, and associated current or new tables.

(2) The Applicant's response to RAI Question 02.03.04-3 indicates that the decision to use the Prairie Island meteorological data from among the six site locations considered (i.e., San Onofre, Hope Creek, Prairie Island, Quad Cities, Limerick, and J.A. Fitzpatrick) was based on using these data and the APR1400 design-specific source-receptor design parameters to perform a sensitivity analysis to identify the most conservative data for the Control Room habitability analysis.

Explain in more detail the scope and limitations of the sensitivity analysis and whether it simply evaluated variations in X/Qs for the various source-receptor pairs considered based on presumably different meteorological conditions from among the six sites, or because wind direction measurements are referenced to True North whether different plant layout orientations were also accounted for using each meteorological data set.

Response - (Rev. 1)

(1) All possible forty one (41) source-receptor combinations are listed and described in Table 1 based on the new calculation of the onsite χ/Q as shown in Revised Response to RAI 20-7912 -Question 02.03.04-1.As indicated in Table 1, among these possible combinations, the pairs for cross release-intake cases, e.g. south vent to north intake or north vent to south intake, are always bounded by the cases for direct release-intake cases, e.g. north vent to north intake or south vent to south intake.

Table 1. Combinations of Source-Receptor Pairs for Onsite χ/Q

Case No.	Pair No.	Source Point	Receptor Point	Table No. in DCD
1	1-1	Containment Building Surface	MCR and TSC North Intake	Table 2.3-2
	1-2	Containment Building Surface	MCR and TSC South Intake	
	1-3	Containment Building Surface	MCR Roof Centerline	
2	2-1	Containment Building Surface	Auxiliary Building North Intake	Table 2.3-3
	2-2	Containment Building Surface	Auxiliary Building South Intake	
3	3-1	Main Steam Valve Room North Vent	MCR and TSC North Intake	Table 2.3-4
	3-2	Main Steam Valve Room South Vent	MCR and TSC South Intake	
	3-3	Main Steam Valve Room North Vent	MCR and TSC South Intake	
	3-4	Main Steam Valve Room South Vent	MCR and TSC North Intake	
4	4-1	Main Steam Valve Room North Vent	Auxiliary Building North Intake	Table 2.3-5

Case No.	Pair No.	Source Point	Receptor Point	Table No. in DCD
	4-2	Main Steam Valve Room South Vent	Auxiliary Building South Intake	
	4-3	Main Steam Valve Room North Vent	Auxiliary Building South Intake	
	4-4	Main Steam Valve Room South Vent	Auxiliary Building North Intake	
5	5-1	Atmospheric Dump Valve North Vent	MCR and TSC North Intake	
	5-2	Atmospheric Dump Valve South Vent	MCR and TSC South Intake	Table 2.3-6
	5-3	Atmospheric Dump Valve North Vent	MCR and TSC South Intake	
	5-4	Atmospheric Dump Valve South Vent	MCR and TSC North Intake	
6	6-1	Main Steam Safety Valve North Vent	MCR and TSC North Intake	
	6-2	Main Steam Safety Valve South Vent	MCR and TSC South Intake	Table 2.3-7
	6-3	Main Steam Safety Valve North Vent	MCR and TSC South Intake	
	6-4	Main Steam Safety Valve South Vent	MCR and TSC North Intake	
7	7-1	Atmospheric Dump Valve North Vent	Auxiliary Building North Intake	
	7-2	Atmospheric Dump Valve South Vent	Auxiliary Building South Intake	Table 2.3-8
	7-3	Atmospheric Dump Valve North Vent	Auxiliary Building South Intake	
	7-4	Atmospheric Dump Valve South Vent	Auxiliary Building North Intake	
8	8-1	Main Steam Safety Valve North Vent	Auxiliary Building North Intake	
	8-2	Main Steam Safety Valve South Vent	Auxiliary Building South Intake	Table 2.3-9
	8-3	Main Steam Safety Valve North Vent	Auxiliary Building South Intake	
	8-4	Main Steam Safety Valve South Vent	Auxiliary Building North Intake	
9	9-1	Auxiliary Building North Vent	MCR and TSC North Intake	
	9-2	Auxiliary Building South Vent	MCR and TSC South Intake	Table 2.3-10
	9-3	Auxiliary Building North Vent	MCR and TSC South Intake	
	9-4	Auxiliary Building South Vent	MCR and TSC North Intake	
10	10-1	Auxiliary Building North Vent	Auxiliary Building North Intake	
	10-2	Auxiliary Building South Vent	Auxiliary Building South Intake	Table 2.3-11
	10-3	Auxiliary Building North Vent	Auxiliary Building South Intake	
	10-4	Auxiliary Building South Vent	Auxiliary Building North Intake	
11	11-1	Fuel Handling Area Vent	MCR and TSC North Intake	
	11-2	Fuel Handling Area Vent	MCR and TSC South Intake	Table 2.3-12
	11-3	Fuel Handling Area Vent	Auxiliary Building North Intake	
	11-4	Fuel Handling Area Vent	Auxiliary Building South Intake	

(2) The Onsite χ/Qs listed in DCD Section 2.3 are determined based on the assumption that the True north meteorological data is the same as plant north. If all possible plant orientations are to be considered for the six U.S. site meteorological data, a huge number of evaluations would need to be performed. Therefore, to avoid this complexity while providing conservatism in the analysis, the following approach is applied:

a. Publicly available U.S. site-specific onsite χ/Q values used in the AST license amendment requests (LARs) were investigated from NRC ADAMS database.

b. The U.S. site-specific onsite χ/Qs provided in Table 2 were reviewed to identify the most limiting χ/Q values. It should be noted that some of the excessively high onsite χ/Qs in Table 2 (Seabrook and Waterford) are not analyzed due to the meteorological conditions of these sites and the limiting source-receptor geometries (i.e., short distance between the source and receptor points).

c. The APR1400 design-specific source-receptor geometric models are developed for the control room north intake (NI) and south intake (SI) for the releases from the north and south Main Steam Valve Room. These models potentially cover releases from both the north and south sides of the plant.

d. The ARCON96 code inputs are developed based on the APR1400 plant-specific design.

e. The publicly available meteorological data is selected for six (6) US sites, namely: San Onofre (Pacific Ocean), Hope Creek (Delaware River), Prairie Island (Mississippi River), Quad Cities (Mississippi River), Limerick (Schuylkill River), J.A Fitzpatrick (Lake Ontario) and used in ARCON96 analyses. The meteorological data files for these plants are formatted for the ARCON96 use.

f. The four APR1400 design-specific release models developed in Steps (c) and (d) are calculated using ARCON96 code and the resulting χ/Qs were reviewed as provided in Tables 3 through 8.

g. The review of the χ/Q values in Tables 3 through 8 indicated that:

- The release from the north side (MSN) of the APR1400 plant results in the most limiting χ/Qs for the north CR intake (NI) with the Prairie Island meteorological data during the first 2 hours, and time intervals from 24 to 96 hours and 96 to 720 of an event (Table 5) and with the Quad Cities meteorological data after 2 hours for 22 hours (Table 6).

- The release from the south side (MSS) of the APR1400 plant results in higher χ/Qs for the north CR intake (NI) with the Hope Creek meteorological data during the first 2 hours of an event (Table 4), with the Prairie Island meteorological data from 2 to 96 hours (Table 5), and with Fitzpatrick meteorological data after 96 hours. (Table 8).

- The release from the south side (MSS) of the APR1400 plant results in a higher χ/Qs for the south CR intake (SI) with the Quad Cities meteorological data for all time intervals (Table 6).

- The release from the north side (MSN) of the APR1400 plant results in a higher χ/Qs for the south CR intake (SI) with San Onofre during the first 8 hours and from 24 to 770 hours (Table 3), and with Hope Creek meteorological data from 8 to 24 hours. (Table 4).

As a result, it was found that no single site-specific meteorological condition provided the limiting χ/Qs for all four source-receptor geometries. However, the Prairie Island results in Table 5 are observed to be more suitable by comparison to be used for the more limiting χ/Q values for APR1400 source-receptor geometries; and the onsite χ/Q values were thus analyzed using the 5-year Prairie Island meteorological hourly data, and the resulting χ/Q values are adjusted by an increase of 50% (or a multiplication factor of 1.5) such that the modeled onsite χ/Q values become bounding for the US site meteorological conditions as indicated in Table 9.

Table 2. Onsite Control Room χ/Qs - Various US Sites

Release To Control Room	Control Room χ/Q Values					Reference AST License Amendment
	0 to 2 hrs	2 to 8 hrs	8 to 24 hrs	1 to 4 days	4 to 30 days	
Containment Surface Leakage						
Point Beach 1 & 2	1.39E-03	9.80E+04	3.84E-04	3.46E-04	3.02E-04	Table 3.1-1, 4/14/2011, ML110240054
San Onofre 2 & 3	1.01E-03	6.41E-04	1.77E-04	2.36E-04	2.20E-04	Table 2, 12/29/2006, ML063400359
Surry 1 & 2	6.74E-04	5.18E-04	2.22E-04	1.66E-04	1.20E-04	Table 2, 3/8/2002, ML020710159
HB Robinson 2	4.15E-03	2.74E-03	1.17E-03	8.18E-04	6.74E-04	Table 3.5-1, 9/24/2004, ML042680089
Seabrook 1	3.08E-03	2.17E-03	8.48E-04	6.31E-04	4.64E-04	Table 2, 2/24/2005, ML050320373
North Anna 1 & 2	1.23E-03	9.02E-04	3.57E-04	2.55E-04	1.91E-04	Table 1, 6/15/2005, ML051590510
Byron/Braidwood 1 & 2	1.01E-03	7.25E-04	3.07E-04	2.07E-04	1.46E-04	Table 1, 9/8/2006, ML062340420
Millstone 3	5.34E-04	3.23E-04	1.38E-04	8.78E-05	7.42E-05	Table 2, 9/15/2006, ML061990135
South Texas Project 1 & 2	2.17E-04	1.37E-04	6.15E-05	4.14E-05	2.30E-05	Table 2, 3/6/2008, ML080160013
Refueling Water Storage Tank (RWST) Release						
San Onofre 2 & 3	5.67E-04	2.25E-04	8.84E-05	8.97E-05	7.37E-05	Table 2, 12/29/2006, ML063400359
Oconee 1, 2 & 3	2.13E-04	1.61E-04	6.66E-05	5.19E-05	4.06E-04	Table 4, 6/1/2004, ML041540097
Seabrook 1	7.52E-03	3.85E-03	1.26E-03	9.29E-04	7.23E-04	Table 2, 2/24/2005 ML050320373
North Anna 1 & 2	2.18E-03	1.42E-03	4.89E-04	3.84E-04	2.72E-04	Table 1, 6/15/2005, ML051590510
Millstone 3	2.61E-04	1.59E-04	6.45E-05	4.83E-05	3.63E-05	Table 2, 9/15/2006, ML061990135
Point Beach 1 & 2	9.89E-03	7.98E-03	2.88E-03	2.75E-03	2.35E-03	Table 3.1-1, 4/14/2011, ML110240054
Atmospheric Dump Valve (ADV) Release						
Salem 1 & 2	1.57E-02	1.13E-02	4.24E-03	3.08E-03	2.26E-03	Table 2, 2/17/2006, ML060040322
San Onofre 2 & 3	3.70E-03	1.99E-03	6.95E-04	7.04E-04	6.34E-04	Table 2, 12/29/2006, ML063400359
Waterford 3	1.06E-01	7.45E-02	3.30E-02	2.31E-02	1.62E-02	Table 15, 3/29/2005, ML050890248
Seabrook 1	6.98E-04	2.79E-03	1.02E-03	7.54E-04	5.45E-04	Table 2, 2/24/2005, ML050320373
North Anna 1 & 2	1.04E-02	8.20E-03	3.23E-03	2.25E-03	1.68E-03	Table 1, 6/15/2005, ML051590510
Byron/Braidwood 1 & 2	8.14E-04	6.98E-04	3.12E-04	1.95E-04	1.67E-04	Table 1, 9/8/2006, ML062340420
South Texas Project 1 & 2	6.13E-04	3.27E-04	1.55E-04	1.01E-04	7.18E-05	Table 2, 3/6/2008, ML080160013
Main Steam Safety Valve (MSSV) Release						
Point Beach 1 & 2	4.66E-03	3.40E-03	1.17E-03	1.07E-03	9.05E-04	Table 3.1-1, 4/14/2011, ML110240054
Salem 1 & 2	1.57E-02	1.13E-02	4.24E-03	3.08E-03	2.26E-03	Table 2, 2/17/2006, ML060040322
San Onofre 2 & 3	1.22E-03	7.52E-04	2.48E-04	2.86E-04	2.60E-04	Table 2, 12/29/2006, ML063400359
Waterford 3	4.36E-02	3.08E-02	1.33E-02	9.01E-03	6.57E-03	Table 15, 3/29/2005, ML050890248
HB Robinson 2	2.60E-03	1.65E-03	7.22E-04	4.97E-04	4.01E-04	Table 3.5-1, 9/24/2004, ML042680089
Seabrook 1	8.22E-04	3.31E-03	1.24E-03	8.72E-04	5.86E-04	Table 2, 2/24/2005, ML050320373
Byron/Braidwood 1 & 2	8.14E-04	6.98E-04	3.12E-04	1.95E-04	1.67E-04	Table 1, 9/8/2006, ML062340420
Millstone 3	1.46E-03	8.76E-04	3.42E-04	2.71E-04	1.96E-04	Table 2, 9/15/2006, ML061990135

Table 2 (Cont'd) Onsite Control Room χ/Qs - Various US Sites

Release To Control Room	Control Room χ/Q Values					Reference AST License Amendment
	0 to 2 hrs	2 to 8 hrs	8 to 24 hrs	1 to 4 days	4 to 30 days	
Fuel Handling Building (FHA) Release						
San Onofre 2 & 3	9.48E-04	7.61E-04	1.92E-04	2.65E-04	2.43E-04	Table 2, 12/29/2006, ML063400359
Waterford 3	9.75E-04	7.74E-04	3.33E-04	2.22E-04	1.55E-04	Table 15, 3/29/2005, ML050890248
Surry 1 & 2	1.07E-03					Table 2, 3/8/2002, ML020710159
Oconee 1, 2 & 3	5.38E-04	3.74E-04	1.57E-04	1.24E-04	1.01E-04	Table 4, 6/1/2004, ML041540097
HB Robinson 2	1.34E-03	1.02E-03	4.31E-04	3.21E-04	2.56E-04	Table 3.5-1, 9/24/2004, ML042680089
McGuire 1 & 2	1.68E-03					Table 4, 12/22/2006, ML063100406
Containment Building Equipment or Personnel Hatch (FHA)						
San Onofre 2 & 3	8.01E-04	6.35E-04	1.78E-04	2.23E-04	2.03E-04	Table 2, 12/29/2006, ML063400359
Waterford 3	1.93E-03	1.60E-03	7.42E-04	5.61E-04	4.24E-04	Table 15, 3/29/2005, ML050890248
Seabrook 1	2.84E-03	2.30E-03	8.67E-04	5.87E-04	3.70E-04	Table 2, 2/24/2005, ML050320373
North Anna 1 & 2	3.75E-03	2.60E-03	1.03E-03	7.03E-04	5.52E-04	Table 1, 6/15/2005, ML051590510
McGuire 1 & 2	4.06E-03					Table 4, 12/22/2006, ML063100406
Plant Vent Stack						
Point Beach 1 & 2	1.80E-03	1.31E-03	5.15E-04	4.03E-04	3.03E-04	Table 3.1-1, 4/14/2011, ML110240054
Salem 1 & 2	1.78E-05	1.31E-05	5.22E-04	3.77E-04	3.17E-04	Table 2, 2/17/2006, ML060040322
San Onofre 2 & 3	1.15E-03	6.23E-04	2.14E-04	2.22E-04	2.02E-04	Table 2, 12/29/2006, ML063400359
Waterford 3	2.77E-03	1.78E-03	7.22E-04	5.49E-03	4.32E-04	Table 15, 3/29/2005, ML050890248
Surry 1 & 2	6.95E-04	5.40E-04	2.30E-04	1.71E-04	1.22E-04	Table 2, 3/8/2002, ML020710159
Oconee 1, 2 & 3	4.79E-04	3.40E-04	1.40E-04	1.09E-04	8.86E-05	Table 4, 6/1/2004, ML041540097
HB Robinson 2	1.24E-03	8.97E-04	3.62E-04	2.58E-04	2.14E-04	Table 3.5-1, 9/24/2004, ML042680089
Seabrook 1	7.54E-04	5.03E-04	2.00E-04	1.45E-04	9.89E-05	Table 2, 2/24/2005, ML050320373
North Anna 1 & 2	3.75E-03	2.65E-03	1.03E-03	7.77E-04	5.70E-04	Table 1, 6/15/2005, ML051590510
Byron & Braidwood 1 & 2	2.46E-04	1.92E-03	8.14E-04	5.52E-04	4.40E-04	Table 1, 9/8/2006, ML062340420
Millstone 3	3.18E-04	2.26E-04	9.06E-05	6.42E-05	4.59E-05	Table 2, 9/15/2006, ML061990135
South Texas Project 1 & 2	7.12E-04	5.28E-04	2.04E-04	1.61E-04	9.76E-05	Table 2, 3/6/2008, ML080160013
MSLB Accident Release						
Salem 1 & 2	6.17E-03	4.19E-03	1.57E-03	1.04E-03	8.13E-04	Table 2, 2/17/2006, ML060040322
San Onofre 2 & 3	7.78E-03	4.81E-03	1.62E-03	1.83E-03	1.68E-03	Table 2, 12/29/2006, ML063400359
Waterford 3	5.09E-02	3.26E-02	1.39E-02	8.81E-03	6.87E-03	Table 15, 3/29/2005, ML050890248
HB Robinson 2	2.48E-03	1.57E-03	7.05E-04	4.74E-04	3.93E-04	Table 3.5-1, 9/24/2004, ML042680089
Seabrook 1	4.55E-03	3.72E-03	1.38E-03	9.67E-04	6.35E-04	Table 2, 2/24/2005, ML050320373
Byron & Braidwood 1 & 2	1.70E-02	1.46E-02	6.68E-03	4.48E-03	3.31E-03	Table 1, 9/8/2006, ML062340420

Table 3

χ/Qs Values for North & South Main Steam Valve Room Releases to North & South Control Room Intakes using San Onofre Met Data Files

Time Interval (hr)	Atmospheric Dispersion Factors (χ/Qs) (s/m^3)			
	North MSN To CR(NI)	South MSS To CR(SI)	North MSN To CR(SI)	South MSS To CR(NI)
0-2	3.81E-03	3.09E-03	1.36E-03	9.51E-04
2-8	1.54E-03	1.26E-03	1.01E-03	6.57E-04
8-24	6.43E-04	5.25E-04	2.99E-04	2.86E-04
24-96	5.26E-04	5.08E-04	3.71E-04	2.11E-04
96-720	4.18E-04	4.46E-04	3.30E-04	1.58E-04

Table 4

χ/Qs Values for North & South Main Steam Valve Room Releases to North & South Control Room Intakes using Hope Creek Met Data Files

Time Interval (hr)	Atmospheric Dispersion Factors (χ/Qs) (s/m^3)			
	North MSN To CR(NI)	South MSS To CR(SI)	North MSN To CR(SI)	South MSS To CR(NI)
0-2	6.49E-03	6.45E-03	1.26E-03	1.23E-03
2-8	4.21E-03	4.59E-03	1.00E-03	9.05E-04
8-24	1.55E-03	1.65E-03	4.30E-04	3.67E-04
24-96	1.06E-03	1.12E-03	3.11E-04	2.56E-04
96-720	7.66E-04	7.38E-04	2.03E-04	2.03E-04

Table 5

χ/Qs Values for North & South Main Steam Valve Room Releases to North & South Control Room Intakes using Prairie Island Met Data Files

Time Interval (hr)	Atmospheric Dispersion Factors (χ/Qs) (s/m^3)			
	North MSN To CR(NI)	South MSS To CR(SI)	North MSN To CR(SI)	South MSS To CR(NI)
0-2	6.71E-03	6.29E-03	1.00E-03	1.21E-03
2-8	5.23E-03	4.91E-03	5.18E-04	9.88E-04
8-24	2.29E-03	2.16E-03	2.26E-04	4.43E-04
24-96	1.59E-03	1.43E-03	1.59E-04	2.85E-04
96-720	1.23E-03	1.13E-03	1.18E-04	2.22E-04

Table 6

χ/Qs Values for North & South Main Steam Valve Room Releases to North & South Control Room Intakes using Quad Cities Met Data Files

Time Interval (hr)	Atmospheric Dispersion Factors (χ/Qs) (s/m^3)			
	North MSN To CR(NI)	South MSS To CR(SI)	North MSN To CR(SI)	South MSS To CR(NI)
0-2	6.57E-03	6.53E-03	1.09E-03	1.18E-03
2-8	5.61E-03	5.66E-03	8.52E-04	9.07E-04
8-24	2.38E-03	2.43E-03	3.63E-04	3.53E-04
24-96	1.51E-03	1.63E-03	2.32E-04	2.21E-04
96-720	1.07E-03	1.13E-03	1.41E-04	1.70E-04

Table 7

χ/Qs Values for North & South Main Steam Valve Room Releases to North & South Control Room Intakes using Limerick Met Data Files

Time Interval (hr)	Atmospheric Dispersion Factors (χ/Qs) (s/m^3)			
	North MSN To CR(NI)	South MSS To CR(SI)	North MSN To CR(SI)	South MSS To CR(NI)
0-2	5.99E-03	6.01E-03	1.06E-03	1.08E-03
2-8	4.41E-03	4.77E-03	7.37E-04	6.72E-04
8-24	1.66E-03	1.88E-03	2.95E-04	2.42E-04
24-96	1.13E-03	1.23E-03	1.99E-04	1.57E-04
96-720	7.62E-04	8.20E-04	1.51E-04	1.16E-04

Table 8

χ/Qs Values for North & South Main Steam Valve Room Releases to North & South Control Room Intakes using Fitzpatrick Met Data Files

Time Interval (hr)	Atmospheric Dispersion Factors (χ/Qs) (s/m^3)			
	North MSN To CR(NI)	South MSS To CR(SI)	North MSN To CR(SI)	South MSS To CR(NI)
0-2	4.75E-03	4.14E-03	5.76E-04	1.12E-03
2-8	3.45E-03	2.82E-03	4.58E-04	9.87E-04
8-24	1.37E-03	1.19E-03	2.16E-04	3.57E-04
24-96	8.16E-04	7.68E-04	1.33E-04	2.80E-04
96-720	5.96E-04	4.91E-04	1.01E-04	2.39E-04

Table 9

Bounding χ/Qs Values for North & South Main Steam Valve Room Releases to North & South Control Room Intakes using Prairie Island Met Data Files

Time Interval (hr)	Atmospheric Dispersion Factors (χ/Qs)* (s/m^3)			
	North MSN To CR(NI)	South MSS To CR(SI)	North MSN To CR(SI)	South MSS To CR(NI)
0-2	1.01E-02	9.44E-03	1.50E-03	1.82E-03
2-8	7.85E-03	7.37E-03	7.77E-04	1.48E-03
8-24	3.44E-03	3.24E-03	3.39E-04	6.65E-04
24-96	2.39E-03	2.15E-03	2.39E-04	4.28E-04
96-720	1.85E-03	1.70E-03	1.77E-04	3.33E-04

* χ /Q Values in Table 5 are multiplied by 1.5

Impact on DCD

There is no impact on the DCD.

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 Environmental Report.