



Serial: NPD-NRC-2009-198
August 31, 2009

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

**SHEARON HARRIS NUCLEAR POWER PLANT, UNITS 2 AND 3
DOCKET NOS. 52-022 AND 52-023
SUPPLEMENTAL INFORMATION – ARCON96 OUTPUT FILES**

Reference: Letter from James Scarola (Progress Energy) to U. S. Nuclear Regulatory Commission, dated February 18, 2008, "Supplemental Meteorological Data in Support of Combined License Application for Shearon Harris Nuclear Power Plant Units 2 and 3", Serial: NPD-NRC-2008-003.

In the referenced letter, Progress Energy provided five years of hourly data in ARCON model input format. Recent discussions with the NRC Staff have indicated that copies of the ARCON96 output files (or log files) would facilitate the NRC Staff's review of the Levy COL Application. Attached are printouts of the ARCON96 output runs titled:

ARCON96 Output Files - Control Room HVAC Intake Receptor

PT1CR.log	Plant Vent
PT2CR.log	PCS Air Diffuser
PT3CR.log	Fuel Building Blowout Panel
PT4CR.log	Radwaste Building Truck Staging Area Door
PT5CR.log	Steam Vent
PT6CR.log	PORV and Safety Valve Releases
PT7CR.log	Condenser Air Removal Stack
PT8CR.log	Containment Shell

ARCON96 Output Files - Annex Building Door Receptor

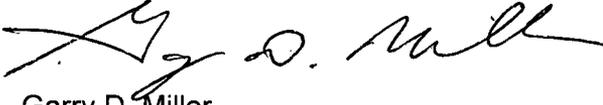
PT1DOOR.log	Plant Vent
PT2DOOR.log	PCS Air Diffuser
PT3DOOR.log	Fuel Building Blowout Panel
PT4DOOR.log	Radwaste Building Truck Staging Area Door
PT5DOOR.log	Steam Vent
PT6DOOR.log	PORV and Safety Valve Releases
PT7DOOR.log	Condenser Air Removal Stack
PT8DOOR.log	Containment Shell

If you have any further questions, or need additional information, please contact Bob Kitchen at (919) 546-6992, or me at (919) 546-6107.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on August 31, 2009.

Sincerely,

A handwritten signature in black ink, appearing to read "Garry D. Miller". The signature is fluid and cursive, with the first name "Garry" being the most prominent part.

Garry D. Miller
General Manager
Nuclear Plant Development

Attachments

cc: Mr. Brian Hughes, U.S. NRC Project Manager

cc (without attachments):

U.S. NRC Region II, Regional Administrator
U.S. NRC Resident Inspector, SHNPP Unit 1

PT1CR.LOG

Program Title: ARCON96.

Developed For: U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Reactor Program Management

Date: June 25, 1997 11:00 a.m.

NRC Contacts: J. Y. Lee Phone: (301) 415 1080
e-mail: jy11@nrc.gov
J. J. Hayes Phone: (301) 415 3167
e-mail: jjh@nrc.gov
L. A. Brown Phone: (301) 415 1232
e-mail: lab2@nrc.gov

Code Developer: J. V. Ramsdell Phone: (509) 372 6316
e-mail: j_ramsdell@pnl.gov

Code Documentation: NUREG/CR-6331 Rev. 1

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Program Run 7/23/2008 at 11:55:08

***** ARCON INPUT *****

Number of Meteorological Data Files = 1
Meteorological Data File Names
C:\ARCON96\NEWFOL~1\SHNP03~1.MET

Height of lower wind instrument (m) = 12.0
Height of upper wind instrument (m) = 61.0
Wind speeds entered as meters/second

Ground-level release
Release height (m) = 55.7
Building Area (m²) = 1830.0
Effluent vertical velocity (m/s) = .00
Vent or stack flow (m³/s) = .00
Vent or stack radius (m) = .00

Direction .. intake to source (deg) = 261
Wind direction sector width (deg) = 90
Wind direction window (deg) = 216 - 306
Distance to intake (m) = 44.9
Intake height (m) = 19.9
Terrain elevation difference (m) = .0

Output file names
PT1CR.LOG
PT1CR.CFD

Minimum Wind Speed (m/s) = .5
Surface roughness length (m) = .20
Sector averaging constant = 4.3
Initial value of sigma y = .00

PT1CR.LOG

Initial value of sigma z = .00

Expanded output for code testing not selected

Total number of hours of data processed = 51168
 Hours of missing data = 555
 Hours direction in window = 12069
 Hours elevated plume w/ dir. in window = 0
 Hours of calm winds = 7353
 Hours direction not in window or calm = 31191

DISTRIBUTION SUMMARY DATA BY AVERAGING INTERVAL

AV. PER.	1	2	4	8	12	24
96	168	360	720			
UPPER LIM.	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02
1.00E-02	1.00E-02	1.00E-02	1.00E-02			
LOW LIM.	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06
1.00E-06	1.00E-06	1.00E-06	1.00E-06			
ABOVE RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
IN RANGE	19422.	23045.	27699.	33384.	37143.	43003.
49408.	49602.	49667.	48448.			
BELOW RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
ZERO	31191.	27525.	22785.	16930.	13176.	7109.
613.	49.	0.	0.			
TOTAL X/Qs	50613.	50570.	50484.	50314.	50319.	50112.
50021.	49651.	49667.	48448.			
% NON ZERO	38.37	45.57	54.87	66.35	73.82	85.81
98.77	99.90	100.00	100.00			

95th PERCENTILE X/Q VALUES

	1.96E-03	1.83E-03	1.71E-03	1.57E-03	1.28E-03	9.31E-04
5.73E-04	4.92E-04	4.22E-04	3.83E-04			

95% x/Q for standard averaging intervals

0 to 2 hours	1.96E-03
2 to 8 hours	1.44E-03
8 to 24 hours	6.13E-04
1 to 4 days	4.54E-04
4 to 30 days	3.53E-04

HOURLY VALUE RANGE

	MAX X/Q	MIN X/Q
CENTERLINE	2.43E-03	1.50E-04
SECTOR-AVERAGE	1.42E-03	8.75E-05

NORMAL PROGRAM COMPLETION

PT1DOOR.LOG

Program Title: ARCON96.

Developed For: U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Reactor Program Management

Date: June 25, 1997 11:00 a.m.

NRC Contacts: J. Y. Lee Phone: (301) 415 1080
e-mail: jyl1@nrc.gov
J. J. Hayes Phone: (301) 415 3167
e-mail: jjh@nrc.gov
L. A. Brown Phone: (301) 415 1232
e-mail: lab2@nrc.gov

Code Developer: J. V. Ramsdell Phone: (509) 372 6316
e-mail: j_ramsdell@pn1.gov

Code Documentation: NUREG/CR-6331 Rev. 1

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Program Run 7/23/2008 at 11:56:11

***** ARCON INPUT *****

Number of Meteorological Data Files = 1
Meteorological Data File Names
C:\ARCON96\NEWFOL~1\SHNP03~1.MET

Height of lower wind instrument (m) = 12.0
Height of upper wind instrument (m) = 61.0
wind speeds entered as meters/second

Ground-level release
Release height (m) = 55.7
Building Area (m²) = 2662.0
Effluent vertical velocity (m/s) = .00
Vent or stack flow (m³/s) = .00
Vent or stack radius (m) = .00

Direction .. intake to source (deg) = 262
wind direction sector width (deg) = 90
wind direction window (deg) = 217 - 307
Distance to intake (m) = 115.6
Intake height (m) = 1.5
Terrain elevation difference (m) = .0

Output file names
PT1DOOR.LOG
PT1DOOR.CFD

Minimum wind Speed (m/s) = .5
Surface roughness length (m) = .20
Sector averaging constant = 4.3
Initial value of sigma y = .00

PT1DOOR.LOG

Initial value of sigma z = .00

Expanded output for code testing not selected

Total number of hours of data processed = 51168
 Hours of missing data = 555
 Hours direction in window = 11989
 Hours elevated plume w/ dir. in window = 0
 Hours of calm winds = 7353
 Hours direction not in window or calm = 31271

DISTRIBUTION SUMMARY DATA BY AVERAGING INTERVAL

AVER. PER.	1	2	4	8	12	24
96	168	360	720			
UPPER LIM.	1.00E-03	1.00E-03	1.00E-03	1.00E-03	1.00E-03	1.00E-03
1.00E-03	1.00E-03	1.00E-03	1.00E-03			
LOW LIM.	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07
1.00E-07	1.00E-07	1.00E-07	1.00E-07			
ABOVE RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
IN RANGE	19342.	22981.	27678.	33404.	37166.	43046.
49408.	49602.	49667.	48448.			
BELOW RANGE	0.	0.	0.	0.	0.	0.
0.	3.	0.	0.			
ZERO	31271.	27589.	22806.	16910.	13153.	7066.
613.	46.	0.	0.			
TOTAL X/Qs	50613.	50570.	50484.	50314.	50319.	50112.
50021.	49651.	49667.	48448.			
% NON ZERO	38.22	45.44	54.83	66.39	73.86	85.90
98.77	99.91	100.00	100.00			

95th PERCENTILE X/Q VALUES

	4.22E-04	4.02E-04	3.78E-04	3.47E-04	2.84E-04	2.09E-04
1.31E-04	1.13E-04	9.84E-05	8.92E-05			

95% X/Q for standard averaging intervals

0 to 2 hours	4.22E-04
2 to 8 hours	3.23E-04
8 to 24 hours	1.39E-04
1 to 4 days	1.06E-04
4 to 30 days	8.27E-05

HOURLY VALUE RANGE

	MAX X/Q	MIN X/Q
CENTERLINE	5.26E-04	3.47E-05
SECTOR-AVERAGE	3.07E-04	2.02E-05

NORMAL PROGRAM COMPLETION

PT2CR.LOG

Program Title: ARCON96.

Developed For: U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Reactor Program Management

Date: June 25, 1997 11:00 a.m.

NRC Contacts: J. Y. Lee Phone: (301) 415 1080
e-mail: jy11@nrc.gov
J. J. Hayes Phone: (301) 415 3167
e-mail: jjh@nrc.gov
L. A. Brown Phone: (301) 415 1232
e-mail: lab2@nrc.gov

Code Developer: J. V. Ramsdell Phone: (509) 372 6316
e-mail: j_ramsdell@pnl.gov

Code Documentation: NUREG/CR-6331 Rev. 1

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Program Run 8/ 2/2008 at 11:55:59

***** ARCON INPUT *****

Number of Meteorological Data Files = 1
 Meteorological Data File Names
 C:\ARCON96\NEWFOL~1\SHNP03~1.MET

Height of lower wind instrument (m) = 12.0
 Height of upper wind instrument (m) = 61.0
 wind speeds entered as meters/second

Ground-level release
 Release height (m) = 69.8
 Building Area (m^2) = 1830.0
 Effluent vertical velocity (m/s) = .00
 Vent or stack flow (m^3/s) = .00
 vent or stack radius (m) = .00

Direction .. intake to source (deg) = 291
 wind direction sector width (deg) = 90
 wind direction window (deg) = 246 - 336
 Distance to intake (m) = 36.0
 Intake height (m) = 19.9
 Terrain elevation difference (m) = .0

Output file names
 PT2CR.LOG
 PT2CR.CFD

Minimum wind Speed (m/s) = .5
 Surface roughness length (m) = .20
 Sector averaging constant = 4.3

Initial value of sigma y = .00

Initial value of sigma z = .00

Expanded output for code testing not selected

Total number of hours of data processed = 51168
 Hours of missing data = 555
 Hours direction in window = 9927
 Hours elevated plume w/ dir. in window = 0
 Hours of calm winds = 7307
 Hours direction not in window or calm = 33379

DISTRIBUTION SUMMARY DATA BY AVERAGING INTERVAL

AV. PER.	1	2	4	8	12	24
96	168	360	720			
UPPER LIM.	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02
1.00E-02	1.00E-02	1.00E-02	1.00E-02			
LOW LIM.	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06
1.00E-06	1.00E-06	1.00E-06	1.00E-06			
ABOVE RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
IN RANGE	17234.	20948.	25735.	31740.	35811.	42385.
49533.	49651.	49667.	48448.			
BELOW RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
ZERO	33379.	29622.	24749.	18574.	14508.	7727.
488.	0.	0.	0.			
TOTAL X/Qs	50613.	50570.	50484.	50314.	50319.	50112.
50021.	49651.	49667.	48448.			
% NON ZERO	34.05	41.42	50.98	63.08	71.17	84.58
99.02	100.00	100.00	100.00			

95th PERCENTILE X/Q VALUES

	1.60E-03	1.48E-03	1.37E-03	1.24E-03	1.01E-03	7.42E-04
4.41E-04	3.80E-04	3.44E-04	3.16E-04			

95% X/Q for standard averaging intervals

0 to 2 hours	1.60E-03
2 to 8 hours	1.12E-03
8 to 24 hours	4.94E-04
1 to 4 days	3.41E-04
4 to 30 days	2.97E-04

HOURLY VALUE RANGE

	MAX X/Q	MIN X/Q
CENTERLINE	2.13E-03	1.63E-04
SECTOR-AVERAGE	1.24E-03	9.51E-05

NORMAL PROGRAM COMPLETION

PT2DOOR.LOG

Program Title: ARCON96.

Developed For: U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Reactor Program Management

Date: June 25, 1997 11:00 a.m.

NRC Contacts: J. Y. Lee Phone: (301) 415 1080
e-mail: jy11@nrc.gov
J. J. Hayes Phone: (301) 415 3167
e-mail: jjh@nrc.gov
L. A. Brown Phone: (301) 415 1232
e-mail: lab2@nrc.gov

Code Developer: J. V. Ramsdell Phone: (509) 372 6316
e-mail: j_ramsdell@pn1.gov

Code Documentation: NUREG/CR-6331 Rev. 1

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Program Run 7/23/2008 at 11:58:16

***** ARCON INPUT *****

Number of Meteorological Data Files = 1
Meteorological Data File Names
C:\ARCON96\SHNP03~1.MET

Height of lower wind instrument (m) = 12.0
Height of upper wind instrument (m) = 61.0
wind speeds entered as meters/second

Ground-level release
Release height (m) = 69.8
Building Area (m²) = 2662.0
Effluent vertical velocity (m/s) = .00
Vent or stack flow (m³/s) = .00
Vent or stack radius (m) = .00

Direction .. intake to source (deg) = 273
wind direction sector width (deg) = 90
wind direction window (deg) = 228 - 318
Distance to intake (m) = 104.6
Intake height (m) = 1.5
Terrain elevation difference (m) = .0

Output file names
PT2DOOR.LOG
PT2DOOR.CFD

Minimum Wind Speed (m/s) = .5
Surface roughness length (m) = .20
Sector averaging constant = 4.3

Initial value of sigma y = .00

Initial value of sigma z = .00

Expanded output for code testing not selected

Total number of hours of data processed = 51168
 Hours of missing data = 555
 Hours direction in window = 11211
 Hours elevated plume w/ dir. in window = 0
 Hours of calm winds = 7307
 Hours direction not in window or calm = 32095

DISTRIBUTION SUMMARY DATA BY AVERAGING INTERVAL

AVER. PER.	1	2	4	8	12	24
96	168	360	720			
UPPER LIM.	1.00E-03	1.00E-03	1.00E-03	1.00E-03	1.00E-03	1.00E-03
1.00E-03	1.00E-03	1.00E-03	1.00E-03			
LOW LIM.	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07
1.00E-07	1.00E-07	1.00E-07	1.00E-07			
ABOVE RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.
IN RANGE	18518.	22183.	26940.	32845.	36782.	42972.
49502.	49637.	49667.	48448.			
BELOW RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
ZERO	32095.	28387.	23544.	17469.	13537.	7140.
519.	14.	0.	0.			
TOTAL X/Qs	50613.	50570.	50484.	50314.	50319.	50112.
50021.	49651.	49667.	48448.			
% NON ZERO	36.59	43.87	53.36	65.28	73.10	85.75
98.96	99.97	100.00	100.00			

95th PERCENTILE X/Q VALUES

	4.32E-04	3.99E-04	3.76E-04	3.42E-04	2.79E-04	2.06E-04
1.29E-04	1.09E-04	9.82E-05	8.96E-05			

95% X/Q for standard averaging intervals

0 to 2 hours	4.32E-04
2 to 8 hours	3.11E-04
8 to 24 hours	1.38E-04
1 to 4 days	1.03E-04
4 to 30 days	8.35E-05

HOURLY VALUE RANGE

	MAX X/Q	MIN X/Q
CENTERLINE	5.48E-04	3.49E-05
SECTOR-AVERAGE	3.20E-04	2.04E-05

NORMAL PROGRAM COMPLETION

PT3CR.LOG

Program Title: ARCON96.

Developed For: U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Reactor Program Management

Date: June 25, 1997 11:00 a.m.

NRC Contacts: J. Y. Lee Phone: (301) 415 1080
e-mail: jy11@nrc.gov
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Code Developer: J. V. Ramsdell Phone: (509) 372 6316
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Code Documentation: NUREG/CR-6331 Rev. 1

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Program Run 7/23/2008 at 11:59:16

***** ARCON INPUT *****

Number of Meteorological Data Files = 1
Meteorological Data File Names
C:\ARCON96\SHNP03~1.MET

Height of lower wind instrument (m) = 12.0
Height of upper wind instrument (m) = 61.0
wind speeds entered as meters/second

Ground-level release
Release height (m) = 17.4
Building Area (m²) = 1830.0
Effluent vertical velocity (m/s) = .00
Vent or stack flow (m³/s) = .00
Vent or stack radius (m) = .00

Direction .. intake to source (deg) = 244
wind direction sector width (deg) = 90
wind direction window (deg) = 199 - 289
Distance to intake (m) = 61.9
Intake height (m) = 19.9
Terrain elevation difference (m) = .0

Output file names
PT3CR.LOG
PT3CR.CFD

Minimum Wind Speed (m/s) = .5
Surface roughness length (m) = .20
Sector averaging constant = 4.3

Initial value of sigma y = .00

PT3CR.LOG

Initial value of sigma z = .00

Expanded output for code testing not selected

Total number of hours of data processed = 51168
 Hours of missing data = 555
 Hours direction in window = 11186
 Hours elevated plume w/ dir. in window = 0
 Hours of calm winds = 7217
 Hours direction not in window or calm = 32210

DISTRIBUTION SUMMARY DATA BY AVERAGING INTERVAL

AVER. PER.	1	2	4	8	12	24
96	168	360	720			
UPPER LIM.	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02
1.00E-02	1.00E-02	1.00E-02	1.00E-02			
LOW LIM.	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06
1.00E-06	1.00E-06	1.00E-06	1.00E-06			
ABOVE RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
IN RANGE	18403.	22360.	27105.	32724.	36415.	42278.
49332.	49629.	49667.	48448.			
BELOW RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
ZERO	32210.	28210.	23379.	17590.	13904.	7834.
689.	22.	0.	0.			
TOTAL X/Qs	50613.	50570.	50484.	50314.	50319.	50112.
50021.	49651.	49667.	48448.			
% NON ZERO	36.36	44.22	53.69	65.04	72.37	84.37
98.62	99.96	100.00	100.00			

95th PERCENTILE X/Q VALUES

	1.39E-03	1.34E-03	1.24E-03	1.12E-03	9.14E-04	6.73E-04
4.06E-04	3.49E-04	3.00E-04	2.71E-04			

95% X/Q for standard averaging intervals

0 to 2 hours	1.39E-03
2 to 8 hours	1.03E-03
8 to 24 hours	4.47E-04
1 to 4 days	3.17E-04
4 to 30 days	2.50E-04

HOURLY VALUE RANGE

	MAX X/Q	MIN X/Q
CENTERLINE	1.93E-03	2.56E-04
SECTOR-AVERAGE	1.13E-03	1.49E-04

NORMAL PROGRAM COMPLETION

PT3DOOR.LOG

Program Title: ARCON96.

Developed For: U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Reactor Program Management

Date: June 25, 1997 11:00 a.m.

NRC Contacts: J. Y. Lee Phone: (301) 415 1080
e-mail: jy11@nrc.gov
J. J. Hayes Phone: (301) 415 3167
e-mail: jjh@nrc.gov
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Code Developer: J. V. Ramsdell Phone: (509) 372 6316
e-mail: j_ramsdell@pn1.gov

Code Documentation: NUREG/CR-6331 Rev. 1

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Program Run 7/23/2008 at 12:00:32

***** ARCON INPUT *****

Number of Meteorological Data Files = 1
 Meteorological Data File Names
 C:\ARCON96\NEWFOL~1\SHNP03~1.MET

Height of lower wind instrument (m) = 12.0
 Height of upper wind instrument (m) = 61.0
 wind speeds entered as meters/second

Ground-level release
 Release height (m) = 17.4
 Building Area (m^2) = 2662.0
 Effluent vertical velocity (m/s) = .00
 Vent or stack flow (m^3/s) = .00
 Vent or stack radius (m) = .00

Direction .. intake to source (deg) = 254
 wind direction sector width (deg) = 90
 wind direction window (deg) = 209 - 299
 Distance to intake (m) = 130.3
 Intake height (m) = 1.5
 Terrain elevation difference (m) = .0

Output file names
 PT3DOOR.LOG
 PT3DOOR.CFD

Minimum wind Speed (m/s) = .5
 Surface roughness length (m) = .20
 Sector averaging constant = 4.3

Initial value of sigma y = .00

PT3DOOR.LOG

Initial value of sigma z = .00

Expanded output for code testing not selected

Total number of hours of data processed = 51168
 Hours of missing data = 555
 Hours direction in window = 10755
 Hours elevated plume w/ dir. in window = 0
 Hours of calm winds = 7217
 Hours direction not in window or calm = 32641

DISTRIBUTION SUMMARY DATA BY AVERAGING INTERVAL

AVER. PER.	1	2	4	8	12	24
96	168	360	720			
UPPER LIM.	1.00E-03	1.00E-03	1.00E-03	1.00E-03	1.00E-03	1.00E-03
1.00E-03	1.00E-03	1.00E-03	1.00E-03			
LOW LIM.	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07
1.00E-07	1.00E-07	1.00E-07	1.00E-07			
ABOVE RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
IN RANGE	17972.	21991.	26933.	32736.	36528.	42404.
49304.	49619.	49667.	48448.			
BELOW RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
ZERO	32641.	28579.	23551.	17578.	13791.	7708.
717.	32.	0.	0.			
TOTAL X/Qs	50613.	50570.	50484.	50314.	50319.	50112.
50021.	49651.	49667.	48448.			
% NON ZERO	35.51	43.49	53.35	65.06	72.59	84.62
98.57	99.94	100.00	100.00			

95th PERCENTILE X/Q VALUES

	3.44E-04	3.31E-04	3.04E-04	2.75E-04	2.25E-04	1.64E-04
1.02E-04	8.97E-05	7.94E-05	7.20E-05			

95% X/Q for standard averaging intervals

0 to 2 hours	3.44E-04
2 to 8 hours	2.52E-04
8 to 24 hours	1.09E-04
1 to 4 days	8.18E-05
4 to 30 days	6.74E-05

HOURLY VALUE RANGE

	MAX X/Q	MIN X/Q
CENTERLINE	4.66E-04	6.59E-05
SECTOR-AVERAGE	2.72E-04	3.84E-05

NORMAL PROGRAM COMPLETION

PT4CR.LOG

Program Title: ARCON96.

Developed For: U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Reactor Program Management

Date: June 25, 1997 11:00 a.m.

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Code Developer: J. V. Ramsdell Phone: (509) 372 6316
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Code Documentation: NUREG/CR-6331 Rev. 1

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Program Run 7/23/2008 at 12:01:29

***** ARCON INPUT *****

Number of Meteorological Data Files = 1
Meteorological Data File Names
C:\ARCON96\SHNP03~1.MET

Height of lower wind instrument (m) = 12.0
Height of upper wind instrument (m) = 61.0
wind speeds entered as meters/second

Ground-level release
Release height (m) = 1.5
Building Area (m²) = 1830.0
Effluent vertical velocity (m/s) = .00
Vent or stack flow (m³/s) = .00
Vent or stack radius (m) = .00

Direction .. intake to source (deg) = 235
wind direction sector width (deg) = 90
wind direction window (deg) = 190 - 280
Distance to intake (m) = 66.6
Intake height (m) = 19.9
Terrain elevation difference (m) = .0

Output file names
PT4CR.LOG
PT4CR.CFD

Minimum wind Speed (m/s) = .5
Surface roughness length (m) = .20
Sector averaging constant = 4.3

Initial value of sigma y = .00

Initial value of sigma z = .00

Expanded output for code testing not selected

Total number of hours of data processed = 51168
 Hours of missing data = 555
 Hours direction in window = 11770
 Hours elevated plume w/ dir. in window = 0
 Hours of calm winds = 7217
 Hours direction not in window or calm = 31626

DISTRIBUTION SUMMARY DATA BY AVERAGING INTERVAL

AVER. PER.	1	2	4	8	12	24
96	168	360	720			
UPPER LIM.	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02
1.00E-02	1.00E-02	1.00E-02	1.00E-02			
LOW LIM.	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06
1.00E-06	1.00E-06	1.00E-06	1.00E-06			
ABOVE RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
IN RANGE	18987.	22824.	27424.	32904.	36497.	42199.
49305.	49611.	49667.	48448.			
BELOW RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
ZERO	31626.	27746.	23060.	17410.	13822.	7913.
716.	40.	0.	0.			
TOTAL X/Qs	50613.	50570.	50484.	50314.	50319.	50112.
50021.	49651.	49667.	48448.			
% NON ZERO	37.51	45.13	54.32	65.40	72.53	84.21
98.57	99.92	100.00	100.00			

95th PERCENTILE X/Q VALUES

	1.11E-03	1.05E-03	9.80E-04	8.96E-04	7.34E-04	5.44E-04
3.33E-04	2.86E-04	2.48E-04	2.25E-04			

95% X/Q for standard averaging intervals

0 to 2 hours	1.11E-03
2 to 8 hours	8.26E-04
8 to 24 hours	3.68E-04
1 to 4 days	2.63E-04
4 to 30 days	2.08E-04

HOURLY VALUE RANGE

	MAX X/Q	MIN X/Q
CENTERLINE	1.41E-03	2.29E-04
SECTOR-AVERAGE	8.24E-04	1.34E-04

NORMAL PROGRAM COMPLETION

PT4DOOR.LOG

Program Title: ARCON96.

Developed For: U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Reactor Program Management

Date: June 25, 1997 11:00 a.m.

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Code Developer: J. V. Ramsdell Phone: (509) 372 6316
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Code Documentation: NUREG/CR-6331 Rev. 1

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Program Run 7/23/2008 at 12:02:53

***** ARCON INPUT *****

Number of Meteorological Data Files = 1
Meteorological Data File Names
C:\ARCON96\SHNP03~1.MET

Height of lower wind instrument (m) = 12.0
Height of upper wind instrument (m) = 61.0
wind speeds entered as meters/second

Ground-level release
Release height (m) = 1.5
Building Area (m²) = 2662.0
Effluent vertical velocity (m/s) = .00
Vent or stack flow (m³/s) = .00
Vent or stack radius (m) = .00

Direction .. intake to source (deg) = 249
wind direction sector width (deg) = 90
wind direction window (deg) = 204 - 294
Distance to intake (m) = 132.1
Intake height (m) = 1.5
Terrain elevation difference (m) = .0

Output file names
PT4DOOR.LOG
PT4DOOR.CFD

Minimum Wind Speed (m/s) = .5
Surface roughness length (m) = .20
Sector averaging constant = 4.3

Initial value of sigma y = .00

Initial value of sigma z = .00

Expanded output for code testing not selected

Total number of hours of data processed = 51168
 Hours of missing data = 555
 Hours direction in window = 10939
 Hours elevated plume w/ dir. in window = 0
 Hours of calm winds = 7217
 Hours direction not in window or calm = 32457

DISTRIBUTION SUMMARY DATA BY AVERAGING INTERVAL

AVER. PER.	1	2	4	8	12	24
96	168	360	720			
UPPER LIM.	1.00E-03	1.00E-03	1.00E-03	1.00E-03	1.00E-03	1.00E-03
1.00E-03	1.00E-03	1.00E-03	1.00E-03			
LOW LIM.	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07
1.00E-07	1.00E-07	1.00E-07	1.00E-07			
ABOVE RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
IN RANGE	18156.	22139.	27005.	32726.	36433.	42310.
49294.	49619.	49667.	48448.			
BELOW RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
ZERO	32457.	28431.	23479.	17588.	13886.	7802.
727.	32.	0.	0.			
TOTAL X/Qs	50613.	50570.	50484.	50314.	50319.	50112.
50021.	49651.	49667.	48448.			
% NON ZERO	35.87	43.78	53.49	65.04	72.40	84.43
98.55	99.94	100.00	100.00			

95th PERCENTILE X/Q VALUES

	3.28E-04	3.11E-04	2.88E-04	2.62E-04	2.14E-04	1.57E-04
9.92E-05	8.70E-05	7.61E-05	6.93E-05			

95% X/Q for standard averaging intervals

0 to 2 hours	3.28E-04
2 to 8 hours	2.40E-04
8 to 24 hours	1.05E-04
1 to 4 days	7.98E-05
4 to 30 days	6.47E-05

HOURLY VALUE RANGE

	MAX X/Q	MIN X/Q
CENTERLINE	4.47E-04	7.09E-05
SECTOR-AVERAGE	2.60E-04	4.13E-05

NORMAL PROGRAM COMPLETION

PT5CR.LOG

Program Title: ARCON96.

Developed For: U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Reactor Program Management

Date: June 25, 1997 11:00 a.m.

NRC Contacts: J. Y. Lee Phone: (301) 415 1080
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Code Developer: J. V. Ramsdell Phone: (509) 372 6316
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Code Documentation: NUREG/CR-6331 Rev. 1

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Program Run 7/23/2008 at 12:03:39

***** ARCON INPUT *****

Number of Meteorological Data Files = 1
Meteorological Data File Names
C:\ARCON96\SHNP03~1.MET

Height of lower wind instrument (m) = 12.0
Height of upper wind instrument (m) = 61.0
wind speeds entered as meters/second

Ground-level release
Release height (m) = 17.1
Building Area (m²) = 1830.0
Effluent vertical velocity (m/s) = .00
Vent or stack flow (m³/s) = .00
Vent or stack radius (m) = .00

Direction .. intake to source (deg) = 336
wind direction sector width (deg) = 90
wind direction window (deg) = 291 - 021
Distance to intake (m) = 18.8
Intake height (m) = 19.9
Terrain elevation difference (m) = .0

Output file names
PT5CR.LOG
PT5CR.CFD

Minimum Wind Speed (m/s) = .5
Surface roughness length (m) = .20
Sector averaging constant = 4.3

Initial value of sigma y = .00

PT5CR.LOG

Initial value of sigma z = .00

Expanded output for code testing not selected

Total number of hours of data processed = 51168
 Hours of missing data = 555
 Hours direction in window = 14021
 Hours elevated plume w/ dir. in window = 0
 Hours of calm winds = 7217
 Hours direction not in window or calm = 29375

DISTRIBUTION SUMMARY DATA BY AVERAGING INTERVAL

AV. PER.	1	2	4	8	12	24
96	168	360	720			
UPPER LIM.	1.00E-01	1.00E-01	1.00E-01	1.00E-01	1.00E-01	1.00E-01
1.00E-01	1.00E-01	1.00E-01	1.00E-01			
LOW LIM.	1.00E-05	1.00E-05	1.00E-05	1.00E-05	1.00E-05	1.00E-05
1.00E-05	1.00E-05	1.00E-05	1.00E-05			
ABOVE RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
IN RANGE	21238.	25295.	30103.	35996.	39900.	45428.
49939.	49651.	49667.	48448.			
BELOW RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
ZERO	29375.	25275.	20381.	14318.	10419.	4684.
82.	0.	0.	0.			
TOTAL X/Qs	50613.	50570.	50484.	50314.	50319.	50112.
50021.	49651.	49667.	48448.			
% NON ZERO	41.96	50.02	59.63	71.54	79.29	90.65
99.84	100.00	100.00	100.00			

95th PERCENTILE X/Q VALUES

	1.37E-02	1.33E-02	1.26E-02	1.15E-02	9.48E-03	6.90E-03
4.26E-03	3.78E-03	3.24E-03	2.99E-03			

95% X/Q for standard averaging intervals

0 to 2 hours	1.37E-02
2 to 8 hours	1.08E-02
8 to 24 hours	4.58E-03
1 to 4 days	3.39E-03
4 to 30 days	2.80E-03

HOURLY VALUE RANGE

	MAX X/Q	MIN X/Q
CENTERLINE	2.09E-02	2.35E-03
SECTOR-AVERAGE	1.22E-02	1.37E-03

NORMAL PROGRAM COMPLETION

PT5DOOR.LOG

Program Title: ARCON96.

Developed For: U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Reactor Program Management

Date: June 25, 1997 11:00 a.m.

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Code Developer: J. V. Ramsdell Phone: (509) 372 6316
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Code Documentation: NUREG/CR-6331 Rev. 1

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Program Run 7/23/2008 at 12:04:35

***** ARCON INPUT *****

Number of Meteorological Data Files = 1
Meteorological Data File Names
C:\ARCON96\SHNP03~1.MET

Height of lower wind instrument (m) = 12.0
Height of upper wind instrument (m) = 61.0
wind speeds entered as meters/second

Ground-level release
Release height (m) = 17.1
Building Area (m²) = 2662.0
Effluent vertical velocity (m/s) = .00
Vent or stack flow (m³/s) = .00
Vent or stack radius (m) = .00

Direction .. intake to source (deg) = 277
wind direction sector width (deg) = 90
wind direction window (deg) = 232 - 322
Distance to intake (m) = 79.7
Intake height (m) = 1.5
Terrain elevation difference (m) = .0

Output file names
PT5DOOR.LOG
PT5DOOR.CFD

Minimum wind Speed (m/s) = .5
Surface roughness length (m) = .20
Sector averaging constant = 4.3

Initial value of sigma y = .00

Initial value of sigma z = .00

Expanded output for code testing not selected

Total number of hours of data processed = 51168
 Hours of missing data = 555
 Hours direction in window = 10312
 Hours elevated plume w/ dir. in window = 0
 Hours of calm winds = 7217
 Hours direction not in window or calm = 33084

DISTRIBUTION SUMMARY DATA BY AVERAGING INTERVAL

AVER. PER.	1	2	4	8	12	24
96	168	360	720			
UPPER LIM.	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-03	1.00E-03
1.00E-03	1.00E-03	1.00E-03	1.00E-03			
LOW LIM.	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-07	1.00E-07
1.00E-07	1.00E-07	1.00E-07	1.00E-07			
ABOVE RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
IN RANGE	17529.	21534.	26478.	32375.	36260.	42468.
49412.	49643.	49667.	48448.			
BELOW RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
ZERO	33084.	29036.	24006.	17939.	14059.	7644.
609.	8.	0.	0.			
TOTAL X/Qs	50613.	50570.	50484.	50314.	50319.	50112.
50021.	49651.	49667.	48448.			
% NON ZERO	34.63	42.58	52.45	64.35	72.06	84.75
98.78	99.98	100.00	100.00			

95th PERCENTILE X/Q VALUES

	8.39E-04	7.95E-04	7.29E-04	6.55E-04	5.32E-04	3.83E-04
2.39E-04	2.05E-04	1.80E-04	1.62E-04			

95% x/Q for standard averaging intervals

0 to 2 hours	8.39E-04
2 to 8 hours	5.94E-04
8 to 24 hours	2.47E-04
1 to 4 days	1.91E-04
4 to 30 days	1.50E-04

HOURLY VALUE RANGE

	MAX X/Q	MIN X/Q
CENTERLINE	1.15E-03	1.77E-04
SECTOR-AVERAGE	6.71E-04	1.03E-04

NORMAL PROGRAM COMPLETION

PT6CR.LOG

Program Title: ARCON96.

Developed For: U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Reactor Program Management

Date: June 25, 1997 11:00 a.m.

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Code Developer: J. V. Ramsdell Phone: (509) 372 6316
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Code Documentation: NUREG/CR-6331 Rev. 1

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Program Run 7/23/2008 at 12:05:31

***** ARCON INPUT *****

Number of Meteorological Data Files = 1
Meteorological Data File Names
C:\ARCON96\SHNP03~1.MET

Height of lower wind instrument (m) = 12.0
Height of upper wind instrument (m) = 61.0
Wind speeds entered as meters/second

Ground-level release
Release height (m) = 19.2
Building Area (m²) = 1830.0
Effluent vertical velocity (m/s) = .00
Vent or stack flow (m³/s) = .00
Vent or stack radius (m) = .00

Direction .. intake to source (deg) = 346
Wind direction sector width (deg) = 90
Wind direction window (deg) = 301 - 031
Distance to intake (m) = 20.4
Intake height (m) = 19.9
Terrain elevation difference (m) = .0

Output file names
PT6CR.LOG
PT6CR.CFD

Minimum Wind Speed (m/s) = .5
Surface roughness length (m) = .20
Sector averaging constant = 4.3

Initial value of sigma y = .00

Initial value of sigma z = .00

Expanded output for code testing not selected

Total number of hours of data processed = 51168
 Hours of missing data = 555
 Hours direction in window = 15045
 Hours elevated plume w/ dir. in window = 0
 Hours of calm winds = 7217
 Hours direction not in window or calm = 28351

DISTRIBUTION SUMMARY DATA BY AVERAGING INTERVAL

AV. PER.	1	2	4	8	12	24
96	168	360	720			
UPPER LIM.	1.00E-01	1.00E-01	1.00E-01	1.00E-01	1.00E-01	1.00E-01
1.00E-01	1.00E-01	1.00E-01	1.00E-01			
LOW LIM.	1.00E-05	1.00E-05	1.00E-05	1.00E-05	1.00E-05	1.00E-05
1.00E-05	1.00E-05	1.00E-05	1.00E-05			
ABOVE RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
IN RANGE	22262.	26151.	30837.	36537.	40306.	45562.
49936.	49651.	49667.	48448.			
BELOW RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
ZERO	28351.	24419.	19647.	13777.	10013.	4550.
85.	0.	0.	0.			
TOTAL X/Qs	50613.	50570.	50484.	50314.	50319.	50112.
50021.	49651.	49667.	48448.			
% NON ZERO	43.98	51.71	61.08	72.62	80.10	90.92
99.83	100.00	100.00	100.00			

95th PERCENTILE X/Q VALUES

	1.18E-02	1.16E-02	1.12E-02	1.04E-02	8.60E-03	6.30E-03
3.93E-03	3.54E-03	3.04E-03	2.80E-03			

95% X/Q for standard averaging intervals

0 to 2 hours	1.18E-02
2 to 8 hours	9.97E-03
8 to 24 hours	4.24E-03
1 to 4 days	3.14E-03
4 to 30 days	2.62E-03

HOURLY VALUE RANGE

	MAX X/Q	MIN X/Q
CENTERLINE	1.82E-02	2.03E-03
SECTOR-AVERAGE	1.06E-02	1.18E-03

NORMAL PROGRAM COMPLETION

PT6DOOR.LOG

Program Title: ARCON96.

Developed For: U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Reactor Program Management

Date: June 25, 1997 11:00 a.m.

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Code Developer: J. V. Ramsdell Phone: (509) 372 6316
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Code Documentation: NUREG/CR-6331 Rev. 1

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Program Run 7/23/2008 at 12:06:27

***** ARCON INPUT *****

Number of Meteorological Data Files = 1
Meteorological Data File Names
C:\ARCON96\SHNP03~1.MET

Height of lower wind instrument (m) = 12.0
Height of upper wind instrument (m) = 61.0
Wind speeds entered as meters/second

Ground-level release
Release height (m) = 19.2
Building Area (m²) = 2662.0
Effluent vertical velocity (m/s) = .00
Vent or stack flow (m³/s) = .00
Vent or stack radius (m) = .00

Direction .. intake to source (deg) = 279
wind direction sector width (deg) = 90
wind direction window (deg) = 234 - 324
Distance to intake (m) = 77.8
Intake height (m) = 1.5
Terrain elevation difference (m) = .0

Output file names
PT6DOOR.LOG
PT6DOOR.CFD

Minimum Wind Speed (m/s) = .5
Surface roughness length (m) = .20
Sector averaging constant = 4.3
Initial value of sigma y = .00

PT6DOOR.LOG

Initial value of sigma z = .00

Expanded output for code testing not selected

Total number of hours of data processed = 51168
 Hours of missing data = 555
 Hours direction in window = 10253
 Hours elevated plume w/ dir. in window = 0
 Hours of calm winds = 7217
 Hours direction not in window or calm = 33143

DISTRIBUTION SUMMARY DATA BY AVERAGING INTERVAL

AV. PER.	1	2	4	8	12	24
96	168	360	720			
UPPER LIM.	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02
1.00E-02	1.00E-02	1.00E-02	1.00E-02			
LOW LIM.	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06
1.00E-06	1.00E-06	1.00E-06	1.00E-06			
ABOVE RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
IN RANGE	17470.	21453.	26392.	32282.	36186.	42412.
49424.	49643.	49667.	48448.			
BELOW RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
ZERO	33143.	29117.	24092.	18032.	14133.	7700.
597.	8.	0.	0.			
TOTAL X/Qs	50613.	50570.	50484.	50314.	50319.	50112.
50021.	49651.	49667.	48448.			
% NON ZERO	34.52	42.42	52.28	64.16	71.91	84.63
98.81	99.98	100.00	100.00			

95th PERCENTILE X/Q VALUES

	8.64E-04	8.31E-04	7.57E-04	6.80E-04	5.53E-04	3.99E-04
2.47E-04	2.12E-04	1.87E-04	1.69E-04			

95% X/Q for standard averaging intervals

0 to 2 hours	8.64E-04
2 to 8 hours	6.19E-04
8 to 24 hours	2.58E-04
1 to 4 days	1.97E-04
4 to 30 days	1.57E-04

HOURLY VALUE RANGE

	MAX X/Q	MIN X/Q
CENTERLINE	1.20E-03	1.80E-04
SECTOR-AVERAGE	7.02E-04	1.05E-04

NORMAL PROGRAM COMPLETION

PT7CR.LOG

Program Title: ARCON96.

Developed For: U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Reactor Program Management

Date: June 25, 1997 11:00 a.m.

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Code Documentation: NUREG/CR-6331 Rev. 1

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Program Run 7/23/2008 at 12:15:44

***** ARCON INPUT *****

Number of Meteorological Data Files = 1
Meteorological Data File Names
C:\ARCON96\SHNP03~1.MET

Height of lower wind instrument (m) = 12.0
Height of upper wind instrument (m) = 61.0
wind speeds entered as meters/second

Ground-level release
Release height (m) = 38.4
Building Area (m²) = 1830.0
Effluent vertical velocity (m/s) = .00
Vent or stack flow (m³/s) = .00
vent or stack radius (m) = .00

Direction .. intake to source (deg) = 075
wind direction sector width (deg) = 90
wind direction window (deg) = 030 - 120
Distance to intake (m) = 60.4
Intake height (m) = 19.9
Terrain elevation difference (m) = .0

Output file names
PT7CR.LOG
PT7CR.CFD

Minimum Wind Speed (m/s) = .5
Surface roughness length (m) = .20
Sector averaging constant = 4.3

Initial value of sigma y = .00

Initial value of sigma z = .00

Expanded output for code testing not selected

Total number of hours of data processed = 51168
 Hours of missing data = 555
 Hours direction in window = 8798
 Hours elevated plume w/ dir. in window = 0
 Hours of calm winds = 7404
 Hours direction not in window or calm = 34411

DISTRIBUTION SUMMARY DATA BY AVERAGING INTERVAL

AVER. PER.	1	2	4	8	12	24
96	168	360	720			
UPPER LIM.	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02
1.00E-02	1.00E-02	1.00E-02	1.00E-02			
LOW LIM.	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06
1.00E-06	1.00E-06	1.00E-06	1.00E-06			
ABOVE RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
IN RANGE	16202.	19720.	24352.	30288.	34371.	40873.
49591.	49619.	49667.	48448.			
BELOW RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
ZERO	34411.	30850.	26132.	20026.	15948.	9239.
430.	32.	0.	0.			
TOTAL X/Qs	50613.	50570.	50484.	50314.	50319.	50112.
50021.	49651.	49667.	48448.			
% NON ZERO	32.01	39.00	48.24	60.20	68.31	81.56
99.14	99.94	100.00	100.00			

95th PERCENTILE X/Q VALUES

	1.54E-03	1.46E-03	1.38E-03	1.29E-03	1.06E-03	7.69E-04
4.49E-04	3.75E-04	3.15E-04	2.89E-04			

95% X/Q for standard averaging intervals

0 to 2 hours	1.54E-03
2 to 8 hours	1.20E-03
8 to 24 hours	5.10E-04
1 to 4 days	3.42E-04
4 to 30 days	2.64E-04

HOURLY VALUE RANGE

	MAX X/Q	MIN X/Q
CENTERLINE	2.02E-03	2.12E-04
SECTOR-AVERAGE	1.18E-03	1.24E-04

NORMAL PROGRAM COMPLETION

PT7DOOR.LOG

Program Title: ARCON96.

Developed For: U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Reactor Program Management

Date: June 25, 1997 11:00 a.m.

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Code Documentation: NUREG/CR-6331 Rev. 1

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Program Run 7/23/2008 at 12:47:16

***** ARCON INPUT *****

Number of Meteorological Data Files = 1
Meteorological Data File Names
C:\ARCON96\SHNP03~1.MET

Height of lower wind instrument (m) = 12.0
Height of upper wind instrument (m) = 61.0
wind speeds entered as meters/second

Ground-level release
Release height (m) = 38.4
Building Area (m²) = 2662.0
Effluent vertical velocity (m/s) = .00
Vent or stack flow (m³/s) = .00
Vent or stack radius (m) = .00

Direction .. intake to source (deg) = 310
Wind direction sector width (deg) = 90
Wind direction window (deg) = 265 - 355
Distance to intake (m) = 17.8
Intake height (m) = 1.5
Terrain elevation difference (m) = .0

Output file names
PT7DOOR.LOG
PT7DOOR.CFD

Minimum Wind Speed (m/s) = .5
Surface roughness length (m) = .20
Sector averaging constant = 4.3

Initial value of sigma y = .00

Initial value of sigma z = .00

Expanded output for code testing not selected

Total number of hours of data processed = 51168
 Hours of missing data = 555
 Hours direction in window = 9574
 Hours elevated plume w/ dir. in window = 0
 Hours of calm winds = 7404
 Hours direction not in window or calm = 33635

DISTRIBUTION SUMMARY DATA BY AVERAGING INTERVAL

AVER. PER.	1	2	4	8	12	24
96	168	360	720			
UPPER LIM.	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02
1.00E-02	1.00E-02	1.00E-02	1.00E-02			
LOW LIM.	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06
1.00E-06	1.00E-06	1.00E-06	1.00E-06			
ABOVE RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
IN RANGE	16978.	20427.	24978.	30881.	35014.	41998.
49653.	49651.	49667.	48448.			
BELOW RANGE	0.	0.	0.	0.	0.	0.
78.	0.	0.	0.			
ZERO	33635.	30143.	25506.	19433.	15305.	8114.
290.	0.	0.	0.			
TOTAL X/Qs	50613.	50570.	50484.	50314.	50319.	50112.
50021.	49651.	49667.	48448.			
% NON ZERO	33.54	40.39	49.48	61.38	69.58	83.81
99.42	100.00	100.00	100.00			

95th PERCENTILE X/Q VALUES

	3.42E-03	3.24E-03	3.03E-03	2.77E-03	2.28E-03	1.70E-03
9.58E-04	8.21E-04	7.27E-04	6.45E-04			

95% X/Q for standard averaging intervals

0 to 2 hours	3.42E-03
2 to 8 hours	2.55E-03
8 to 24 hours	1.17E-03
1 to 4 days	7.10E-04
4 to 30 days	5.97E-04

HOURLY VALUE RANGE

	MAX X/Q	MIN X/Q
CENTERLINE	4.66E-03	3.87E-04
SECTOR-AVERAGE	2.72E-03	2.25E-04

NORMAL PROGRAM COMPLETION

PT8CR.LOG

Program Title: ARCON96.

Developed For: U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Reactor Program Management

Date: June 25, 1997 11:00 a.m.

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Code Documentation: NUREG/CR-6331 Rev. 1

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Program Run 7/23/2008 at 12:48:12

***** ARCON INPUT *****

Number of Meteorological Data Files = 1
Meteorological Data File Names
C:\ARCON96\SHNP03~1.MET

Height of lower wind instrument (m) = 12.0
Height of upper wind instrument (m) = 61.0
wind speeds entered as meters/second

Ground-level release
Release height (m) = 19.9
Building Area (m²) = 1830.0
Effluent vertical velocity (m/s) = .00
Vent or stack flow (m³/s) = .00
Vent or stack radius (m) = .00

Direction .. intake to source (deg) = 284
wind direction sector width (deg) = 90
wind direction window (deg) = 239 - 329
Distance to intake (m) = 12.8
Intake height (m) = 19.9
Terrain elevation difference (m) = .0

Output file names
PT8CR.LOG
PT8CR.CFD

Minimum Wind Speed (m/s) = .5
Surface roughness length (m) = .20
Sector averaging constant = 4.3

Initial value of sigma y = 7.20

PT8CR.LOG

Initial value of sigma z = 7.00

Expanded output for code testing not selected

Total number of hours of data processed = 51168
 Hours of missing data = 555
 Hours direction in window = 10095
 Hours elevated plume w/ dir. in window = 0
 Hours of calm winds = 7217
 Hours direction not in window or calm = 33301

DISTRIBUTION SUMMARY DATA BY AVERAGING INTERVAL

AVER. PER.	1	2	4	8	12	24
96	168	360	720			
UPPER LIM.	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02
1.00E-02	1.00E-02	1.00E-02	1.00E-02			
LOW LIM.	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06
1.00E-06	1.00E-06	1.00E-06	1.00E-06			
ABOVE RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
IN RANGE	17312.	21339.	26318.	32248.	36179.	42439.
49407.	49645.	49667.	48448.			
BELOW RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
ZERO	33301.	29231.	24166.	18066.	14140.	7673.
614.	6.	0.	0.			
TOTAL X/Qs	50613.	50570.	50484.	50314.	50319.	50112.
50021.	49651.	49667.	48448.			
% NON ZERO	34.20	42.20	52.13	64.09	71.90	84.69
98.77	99.99	100.00	100.00			

95th PERCENTILE X/Q VALUES

	4.20E-03	4.15E-03	4.00E-03	3.41E-03	2.72E-03	1.93E-03
1.37E-03	1.26E-03	1.17E-03	1.08E-03			

95% X/Q for standard averaging intervals

0 to 2 hours	4.20E-03
2 to 8 hours	3.15E-03
8 to 24 hours	1.19E-03
1 to 4 days	1.18E-03
4 to 30 days	1.04E-03

HOURLY VALUE RANGE

	MAX X/Q	MIN X/Q
CENTERLINE	4.10E-03	4.83E-04
SECTOR-AVERAGE	2.39E-03	2.81E-04

NORMAL PROGRAM COMPLETION

PT8DOOR.LOG

Program Title: ARCON96.

Developed For: U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Reactor Program Management

Date: June 25, 1997 11:00 a.m.

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Code Developer: J. V. Ramsdell Phone: (509) 372 6316
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Code Documentation: NUREG/CR-6331 Rev. 1

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Program Run 7/23/2008 at 12:49:11

***** ARCON INPUT *****

Number of Meteorological Data Files = 1
Meteorological Data File Names
C:\ARCON96\SHNP03~1.MET

Height of lower wind instrument (m) = 12.0
Height of upper wind instrument (m) = 61.0
wind speeds entered as meters/second

Ground-level release
Release height (m) = 1.5
Building Area (m²) = 2662.0
Effluent vertical velocity (m/s) = .00
Vent or stack flow (m³/s) = .00
Vent or stack radius (m) = .00

Direction .. intake to source (deg) = 267
wind direction sector width (deg) = 90
wind direction window (deg) = 222 - 312
Distance to intake (m) = 83.0
Intake height (m) = 1.5
Terrain elevation difference (m) = .0

Output file names
PT8DOOR.LOG
PT8DOOR.CFD

Minimum wind Speed (m/s) = .5
Surface roughness length (m) = .20
Sector averaging constant = 4.3

Initial value of sigma y = 7.20

Initial value of sigma z = 10.20

Expanded output for code testing not selected

Total number of hours of data processed = 51168
 Hours of missing data = 555
 Hours direction in window = 10416
 Hours elevated plume w/ dir. in window = 0
 Hours of calm winds = 7217
 Hours direction not in window or calm = 32980

DISTRIBUTION SUMMARY DATA BY AVERAGING INTERVAL

AVER. PER.	1	2	4	8	12	24
96	168	360	720			
UPPER LIM.	1.00E-03	1.00E-03	1.00E-03	1.00E-03	1.00E-03	1.00E-03
1.00E-03	1.00E-03	1.00E-03	1.00E-03			
LOW LIM.	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07	1.00E-07
1.00E-07	1.00E-07	1.00E-07	1.00E-07			
ABOVE RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
IN RANGE	17633.	21675.	26656.	32602.	36462.	42563.
49410.	49639.	49667.	48448.			
BELOW RANGE	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.			
ZERO	32980.	28895.	23828.	17712.	13857.	7549.
611.	12.	0.	0.			
TOTAL X/Qs	50613.	50570.	50484.	50314.	50319.	50112.
50021.	49651.	49667.	48448.			
% NON ZERO	34.84	42.86	52.80	64.80	72.46	84.94
98.78	99.98	100.00	100.00			

95th PERCENTILE X/Q VALUES

	3.59E-04	3.50E-04	3.31E-04	3.05E-04	2.52E-04	1.92E-04
1.26E-04	1.14E-04	1.02E-04	9.43E-05			

95% X/Q for standard averaging intervals

0 to 2 hours	3.59E-04
2 to 8 hours	2.87E-04
8 to 24 hours	1.35E-04
1 to 4 days	1.04E-04
4 to 30 days	8.94E-05

HOURLY VALUE RANGE

	MAX X/Q	MIN X/Q
CENTERLINE	4.33E-04	9.72E-05
SECTOR-AVERAGE	2.52E-04	5.67E-05

NORMAL PROGRAM COMPLETION