



October 12, 2010

NRC 2010-0163
10 CFR 50.90

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

Point Beach Nuclear Plant, Units 1 and 2
Dockets 50-266 and 50-301
Renewed License Nos. DPR-24 and DPR-27

License Amendment Request 241
Alternate Source Term
Response to Clarification Request

- References: (1) FPL Energy Point Beach, LLC letter to NRC, dated December 8, 2008, License Amendment Request 241, Alternate Source Term (ML083450683)
- (2) NextEra Energy Point Beach, LLC letter to NRC, dated September 3, 2010, License Amendment Request 241, Response to Request for Additional Information (ML102460115)

NextEra Energy Point Beach, LLC (NextEra) submitted License Amendment Request (LAR) 241 (Reference 1) to the NRC pursuant to 10 CFR 50.90. The proposed amendment would revise the current licensing basis to implement the alternative source term (AST) through reanalysis of the radiological consequences of the Point Beach Nuclear Plant (PBNP) final safety analysis report (FSAR) Chapter 14 accidents. Reference (2) provided a revised LOCA control room dose analysis without credit for the Auxiliary Building Ventilation System (VNPAB).

During a conference call on held September 30, 2010, the NRC staff determined that clarification of the information provided in Reference (2) was required to enable the staff's continued review of the request. Enclosure 1 provides the NextEra response to the NRC staff's request for clarification. Enclosure 2 provides ARCON96 data for the χ/Q values presented in Reference (2). Enclosure 3 provides figures identifying the release points evaluated in Reference (2).

This letter contains no new Regulatory Commitments and no revisions to existing Regulatory Commitments.

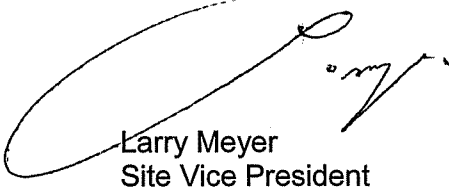
The information contained in this letter does not alter the no significant hazards consideration contained in Reference (1) and continues to satisfy the criteria of 10 CFR 51.22 for categorical exclusion from the requirements of an environmental assessment.

In accordance with 10 CFR 50.91, a copy of this letter is being provided to the designated Wisconsin Official.

I declare under penalty of perjury that the foregoing is true and correct.
Executed on October 12, 2010.

Very truly yours,

NextEra Energy Point Beach, LLC



Larry Meyer
Site Vice President

Enclosures

cc: Administrator, Region III, USNRC
Project Manager, Point Beach Nuclear Plant, USNRC
Resident Inspector, Point Beach Nuclear Plant, USNRC
PSCW

ENCLOSURE 1

NEXTERA ENERGY POINT BEACH, LLC POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

LICENSE AMENDMENT REQUEST 241 ALTERNATE SOURCE TERM RESPONSE TO CLARIFICATION REQUEST

The NRC staff determined that additional information was required to enable the review of License Amendment Request (LAR) 241, Alternate Source Term (AST) (Reference 1). The following information is provided by NextEra Energy Point Beach, LLC (NextEra) in response to the NRC staff's request.

Clarification 1

Provide the ARCON96 data for the χ/Q values presented in the response to Question 1 (ML102460115) of the NRC's request for additional information.

NextEra Response

The ARCON96 data for the χ/Q values presented in Reference (2) is included in Enclosure 2.

Clarification 2

Provide a figure showing the release points.

NextEra Response

The figures showing release points evaluated in Reference (2) are included in Enclosure 3.

Clarification 3

Discuss the selection of the release points versus other release points that were not selected.

NextEra Response

The activity flow paths for Cases 7 and 8 are the most direct. Activity from EI. 8' (residual heat removal [RHR] equipment) can flow directly through the facade (via normal doors) and to the environment via facade roof vents 2-V7 or 1-V9. Case 7 results in the most conservative χ/Q values since vent 2-V7 is closest to the control room air intake.

Cases 1 through 6A assume releases from the PAB roof. There are no direct pathways from the RHR and containment spray (CS) areas to the roof. The pathways include floor hatches and sealed interfaces between piping and ducts which penetrate the floors and exit the pipe chases. These seals and hatches provide long and restricted activity transport pathways to reach the upper elevations of the PAB. Further, there are at least two floors through which activity is assumed to pass, in order to reach the roof, and there are no physical openings on the roof area of interest.

The χ/Q values discussed as Case 7 in Table 1 below and included in Reference (2) represent the most direct path to the environment for the revised loss of coolant accident (LOCA) control room dose analysis without credit for the primary auxiliary building ventilation system (VNPAB).

The 2-V7 roof vent is the assumed source location for Unit 2 RHR system leakage. The source parameters and resulting χ/Q values are summarized in Table 1.

Figure 1 in Enclosure 3 provides a plan view of the release location and control room (CR) air intake. The RHR pumps are located on El. -19' 3". Other RHR equipment is located on El. -5' 3" and El. 8'. A doorway is located on El. 8' (See Figure 2 in Enclosure 3) which leads directly into the containment facade area. To reach the 2-V7 release location, activity released from El. 8' passes directly to the facade. Activity inside the facade travels through the open space and out through the facade roof vent to the environment.

Other Release Locations

The following cases are illustrated in Figures 3 through 6 of Enclosure 3:

1. Primary Auxiliary Building (PAB) to Unit 1 Facade Roof Vent (Case 8)

The flow path to the facade area includes doors. This path potentially allows flow from the RHR rooms to the Unit 1 Facade. The facade roof vent closest to the CR air intake is 1-V9. This case assumes a release path similar to Case 7, but the resulting χ/Q values are less conservative.

2. PAB Roof (Cases 1 through 6A)

The PAB roof directly above the RHR and CS areas, were assumed to be potential activity sources. There are floor hatches and sealed interfaces between the piping and ducts, which penetrate the floors and exit the pipe chases. These seals and hatches were assumed to be potential paths for leakage activity to reach the upper elevations of the PAB.

The RHR pumps are located on El. -19' 3". Other RHR equipment is located on El. -5' 3" and El. 8'. To reach the PAB roof release location, activity is assumed to pass through two to four floors (via closed hatches and sealed pipe chases), into the open space of the PAB and diffuse through the PAB roof. There are no physical openings on the roof area of interest. Additionally, the PAB roof cases (Cases 1 through 6A) assumes a long and restricted activity transport pathway to the environment (compared to Cases 7 and 8).

Table 1: Summary of All Evaluated ARCQN96 Cases for ECCS Leakage

Parameter	Case 1	Case 2	Case 2A	Case 3	Case 4	Case 4A
Figure	3	3	3	4	4	4
Release height above grade, m	25.7					
Intake height above grade, m	26.1					
Sector width constant	4.3					
Surface roughness length, m	0.2					
Wake area, m ²	1690					
Distance to receptor, m	25.5	32.6	25.5	30.6	38.8	30.6
Direction to source, degrees (Note 1)	245	238	245	215	215	215
Release type	Horizontal Area	Point	Point	Horizontal Area	Point	Point
Initial diffusion coefficients, m						
σ_{y0}	1.9	0	0	1.9	0	0
σ_{z0}	0	0	0	0	0	0
Resulting χ/Q , sec/m ³						
0-2 hours	7.67E-03	5.10E-03	1.06E-02	6.71E-03	4.63E-03	7.34E-03
2-8	4.58E-03	2.91E-03	8.68E-03	5.39E-03	3.81E-03	6.00E-03
8-24	1.90E-03	1.11E-03	3.19E-03	2.01E-03	1.41E-03	2.24E-03
1-4 days	1.39E-03	7.67E-04	2.96E-03	1.82E-03	1.28E-03	2.02E-03
4-30	1.13E-03	6.51E-04	2.35E-03	1.45E-03	1.01E-03	1.60E-03

Note 1: The indicated directions are corrected to True North. True North = plant north - 25 deg

Case 1: Unit 2 PAB Roof, above RHR pump room, area source

Case 2: Unit 2 PAB Roof, above RHR pump room, point source

Case 2A: Like Case 2, but point source moved to edge closest to CR air intake

Case 3: Unit 1 PAB Roof, above RHR pump room, area source

Case 4: Unit 1 PAB Roof, above RHR pump room, point source

Case 4A: Like Case 4, but source moved to edge closest to CR air intake

Table 1 (continued)

Parameter	Case 5	Case 6	Case 6A	Case 7	Case 8
Figure	5	5	5	1	6
Release height above grade, m	25.7			42.7	
Intake height above grade, m	26.1				
Sector width constant	4.3				
Surface roughness length, m	0.2				
Wake area, m ²	1690				
Distance to receptor, m	16.3	21.4	16.3	25.7	39.8
Direction to source, degrees (Note 1)	155	186	155	264	195
Release type	Horizontal Area	Point	Point	Point	Point
Initial diffusion coefficients, m					
σ _{y0}	2.1	0	0	0	0
σ _{z0}	0	0	0	0	0
Resulting χ/Q , sec/m3					
0-2 hours	1.61E-02	1.41E-02	2.07E-02	6.78E-03	3.71E-03
2-8	9.43E-03	1.09E-02	1.27E-02	5.03E-03	2.74E-03
8-24	3.94E-03	4.43E-03	5.18E-03	1.72E-03	1.05E-03
1-4 days	2.92E-03	3.46E-03	3.77E-03	1.60E-03	8.41E-04
4-30	2.38E-03	2.68E-03	3.05E-03	1.34E-03	6.34E-04

Note 1: The indicated directions are corrected to True North. True North = plant north - 25 deg

Case 5: PAB Roof, above CS pump room, area source
Case 6: PAB Roof, above CS pump room, point source
Case 6A: Like Case 6, but source moved to edge closest to CR air intake
Case 7: Unit 2 Façade roof vent 2-V7
Case 8: Unit 1 Façade roof vent 1-V9

References

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ENCLOSURE 2

**NEXTERA ENERGY POINT BEACH, LLC
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2**

**LICENSE AMENDMENT REQUEST 241
ALTERNATE SOURCE TERM
RESPONSE TO CLARIFICATION REQUEST**

ARCON96 DATA


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1
2 Program Title: ARCON96.
3
4 Developed For: U.S. Nuclear Regulatory Commission
5               Office of Nuclear Reactor Regulation
6               Division of Reactor Program Management
7
8 Date:         June 25, 1997   11:00 a.m.
9
10 NRC Contacts: J. Y. Lee       Phone: (301) 415 1080
11               J. J. Hayes     e-mail: jyll@nrc.gov
12               L. A. Brown     Phone: (301) 415 3167
13               e-mail: jjh@nrc.gov
14               e-mail: lab2@nrc.gov
15
16 Code Developer: J. V. Ramsdell Phone: (509) 372 6316
17               e-mail: j_ramsdell@pnl.gov
18
19 Code Documentation: NUREG/CR-6331 Rev. 1
20
21 The program was prepared for an agency of the United States Government. Neither
22 the United States Government nor any agency thereof, nor any of their
23 employees, makes any warranty, expressed or implied, or assumes any legal
24 liability or responsibilities for any third party's use, or the results of such
25 use, of any portion of this program or represents that its use by such third
26 party would not infringe privately owned rights.
27
28 Program Run 1/ 1/2009 at 16:07:04
29
30 ***** ARCON INPUT *****
31
32 Number of Meteorological Data Files = 1
33 Meteorological Data File Names
34 C:\ARCON96\PBARCON\POINTEB-1.MET
35
36 Height of lower wind instrument (m) = 10.0
37 Height of upper wind instrument (m) = 45.0
38 Wind speeds entered as miles per hour
39
40 Ground-level release
41 Release height (m) = 42.7
42 Building Area (m^2) = 1690.0
43 Effluent vertical velocity (m/s) = .00
44 Vent or stack flow (m^3/s) = .00
45 Vent or stack radius (m) = .00
46
47 Direction .. intake to source (deg) = 264
48 Wind direction sector width (deg) = 90
49 Wind direction window (deg) = 219 - 309
50 Distance to intake (m) = 25.7
51 Intake height (m) = 26.1
52 Terrain elevation difference (m) = .0
53
54 Output file names
55 c:\pbArcon\ECC7B.log
56 c:\PBARcon\ECC7B.cdf
57
58 Minimum Wind Speed (m/s) = .5
59 Surface roughness length (m) = .20
60 Sector averaging constant = 4.3
61
62 Initial value of sigma y = .00
63 Initial value of sigma z = .00
64
65 Expanded output for code testing not selected
66
67 Total number of hours of data processed = 44335
68 Hours of missing data = 1729
69 Hours direction in window = 13814
70 Hours elevated plume w/ dir. in window = 0
71 Hours of calm winds = 51
72 Hours direction not in window or calm = 28741
73
74 DISTRIBUTION SUMMARY DATA BY AVERAGING INTERVAL
75 AVER. PER. 1 2 4 8 12 24 96 168
76

```

```

360      720
77      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
78      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
79      ABOVE RANGE 0. 0. 0. 0. 0. 0. 0. 0.
      0. 0.
80      IN RANGE 13865. 15380. 17548. 20517. 23977. 29697. 40293. 40586.
      41155. 40978.
81      BELOW RANGE 0. 0. 0. 0. 0. 0. 0. 0.
      0. 0.
82      ZERO 28741. 26773. 23798. 19412. 17235. 11358. 1015. 194.
      0. 0.
83      TOTAL X/Qs 42606. 42153. 41346. 39929. 41212. 41055. 41308. 40780.
      41155. 40978.
84      % NON ZERO 32.54 36.49 42.44 51.38 58.18 72.33 97.54 99.52
      100.00 100.00
85
86      95th PERCENTILE X/Q VALUES
87      6.78E-03 6.50E-03 6.07E-03 5.47E-03 4.37E-03 2.97E-03 1.94E-03 1.73E-03
      1.55E-03 1.42E-03
88
89      95% X/Q for standard averaging intervals
90
91      0 to 2 hours 6.78E-03
92      2 to 8 hours 5.03E-03
93      8 to 24 hours 1.72E-03
94      1 to 4 days 1.60E-03
95      4 to 30 days 1.34E-03
96
97      HOURLY VALUE RANGE
98      MAX X/Q MIN X/Q
99      CENTERLINE 8.26E-03 2.87E-04
100     SECTOR-AVERAGE 4.82E-03 1.68E-04
101
102     NORMAL PROGRAM COMPLETION

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ENCLOSURE 3

**NEXTERA ENERGY POINT BEACH, LLC
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2**

**LICENSE AMENDMENT REQUEST 241
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FIGURES SHOWING RELEASE POINTS EVALUATED



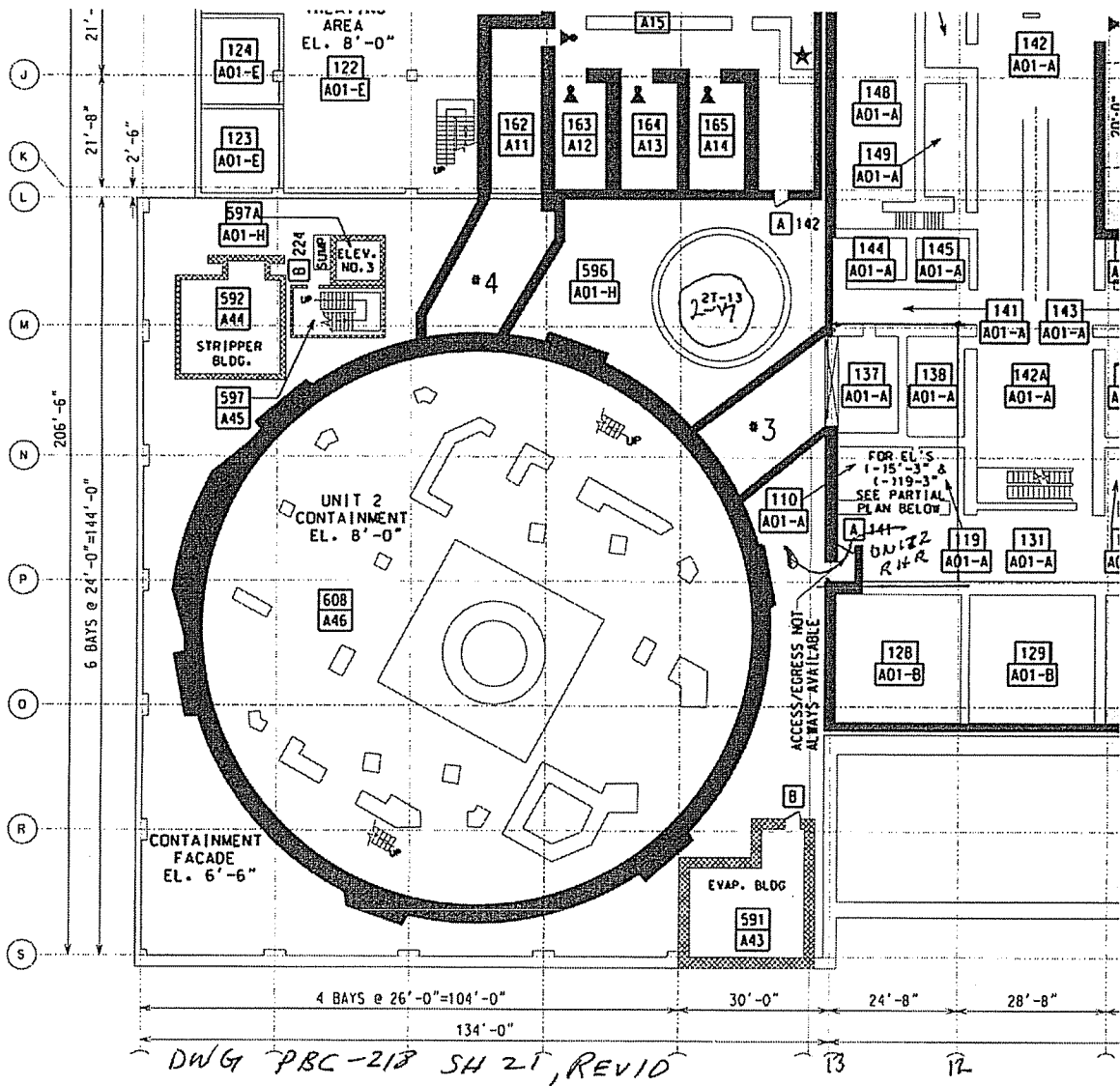


Figure 2: Activity Transport Path from Unit 2 Residual Heat Removal Area to Facade



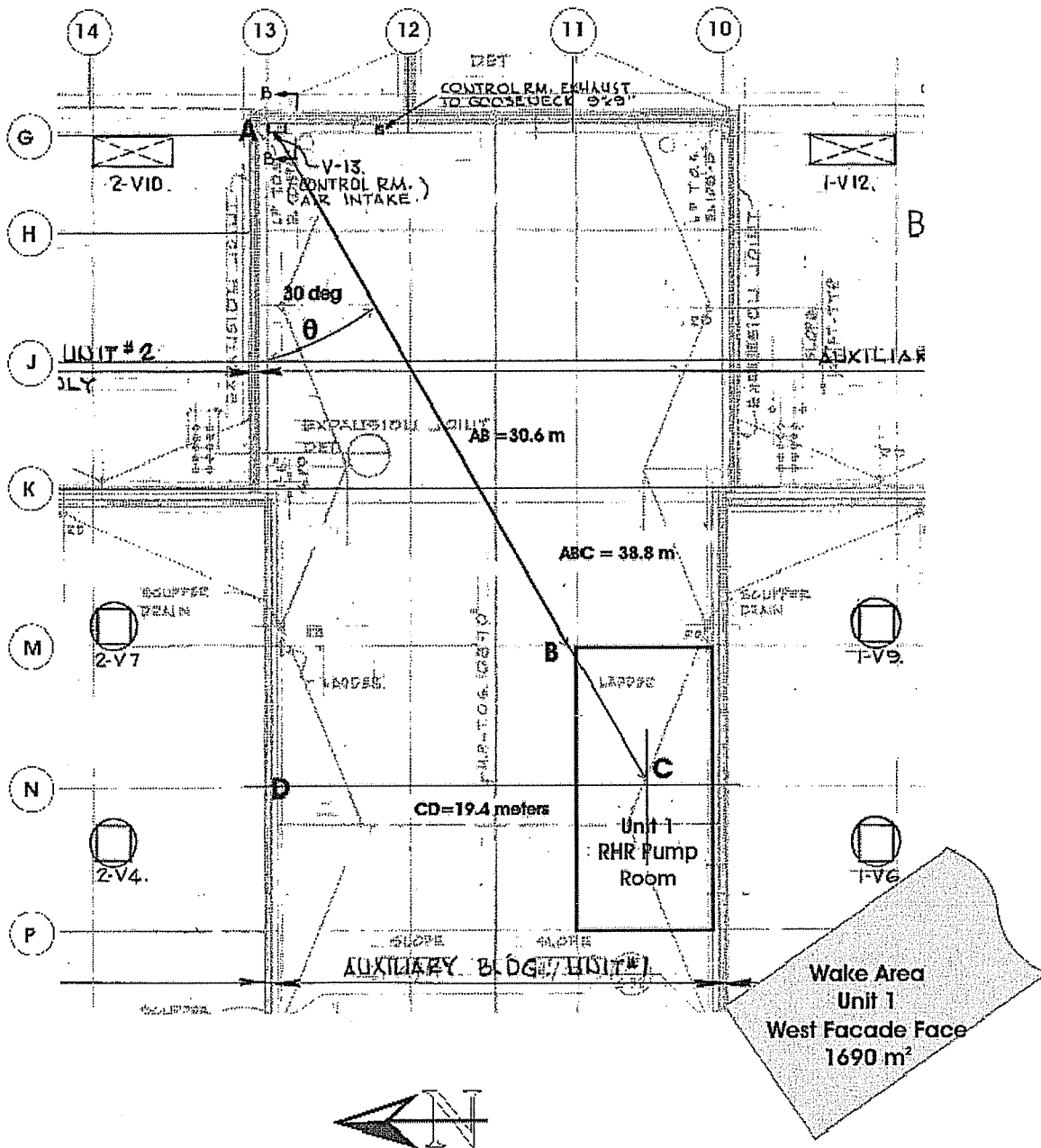


Figure 4: Unit 1 Primary Auxiliary Building Roof, Residual Heat Removal Area



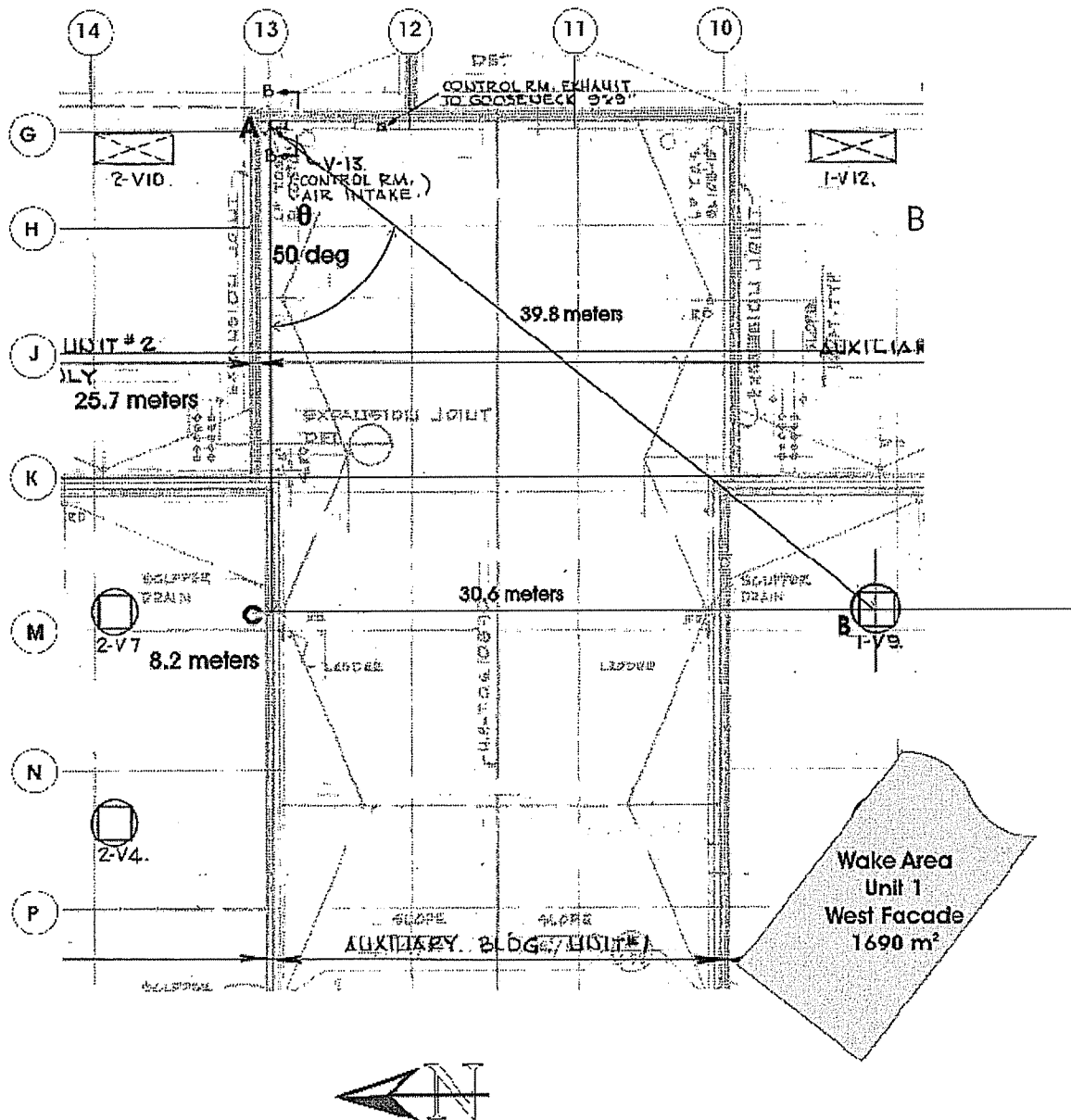


Figure 6: Unit 1 Facade Roof