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MFN 08-879

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U.S. Nuclear Regulatory Commission
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Subject: **Corrected Design Certification Document (DCD) Tables 6.2-12 and 15.4-13**

During the Staff's review of the CONTAIN input deck comparison to Table 6.2-12, the Staff noted on October 9, 2008 that there appeared to by a typographical error in DCD Tier 2 Table 6.2-12. Specifically, it was noted that Table 6.2-12 on page 6.2-96 for Flow Path Numbers 14, 15, 16, and 17 are labeled Type: 'Open Space', while ther CONTAIN Input Deck has them labeled as 'Blowout Panels'. Table 6.2-12 is corrected to indicate that these flow paths are for 'Blowout Panels'.

During the Pacific Northwest National Laboratory (PNNL) review of the ESBWR DCD Section 15.4 accident analysis and dose assessment for NRC Staff, it was discovered on October 14, 2008 that there appeared to be a typographical error in DCD Tier 2 Table 15.4-13 in the Sv/Rem conversion for the EAB dose for the concurrent iodine spike. Table 15.4-13 EAB dose for the concurrent iodine spike Sv/Rem conversion has been corrected accordingly.

GE Hitachi Nuclear Energy (GEH) is providing an advance markup of these corrections in Enclosure 1 to facilitate Staff resolution.

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If you have any questions or require additional information, please contact me.

Sincerely,

Richard E. Kingston

Richard E. Kingston
Vice President, ESBWR Licensing

Enclosure:

1. MFN 08-879 DCD Tier 2 Tables 6.2-12 and 15.4-13 Markups

| | | |
|---|---|---|
| cc: | AE Cubbage | USNRC (with enclosure) |
| | RE Brown | GEH/Wilmington (with enclosure) |
| | DH Hinds | GEH/Wilmington (with enclosure) |
| | eDRFs | 0000-0093-0297 – Table 6.2-12 |
| | | 0000-0092-7662 – Table 15.4-13 |

# Enclosure 1

# MFN 08-879

# DCD Tier 2 Tables 6.2-12 and 15.4-13 Markups

# Table 6.2-12

## Subcompartment Vent Path Designation

## (SI Units)

| Flow Path No. | Type | Cell From | Cell To | P (m) | DH (m) | L/DH | T | K FORW | K REVER | K AVERA | K CONTAIN | Flow Condition | Flow Direction | Blow Out Pressure (kPaG) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | DOOR | 1 | 2 | 8.00 | 2.00 | 1.00 | 0.24 | 1.56 | 1.61 | 1.58 | 0.79 | SUBSONIC | BOTH | NO | TWO WAY PATH |
| 2 | DOOR | 2 | 3 | 8.00 | 2.00 | 0.50 | 0.97 | 1.51 | 1.24 | 1.38 | 0.69 | SUBSONIC | FORWARD | 10.34 | |
| 3 | DOOR | 2 | 3 | 8.00 | 2.00 | 0.50 | 0.97 | 1.52 | 1.26 | 1.39 | 0.70 | SUBSONIC | FORWARD | 10.34 | |
| 4 | DOOR | 3 | 4 | 8.00 | 2.00 | 0.35 | 1.13 | 1.25 | 1.24 | 1.24 | 0.62 | SUBSONIC | FORWARD | 10.34 | |
| 5 | DOOR | 3 | 5 | 8.00 | 2.00 | 0.25 | 1.19 | 1.31 | 1.32 | 1.31 | 0.66 | SUBSONIC | FORWARD | 10.34 | |
| 6 | DOOR | 6 | 7 | 8.00 | 2.00 | 1.00 | 0.24 | 1.56 | 1.61 | 1.58 | 0.79 | SUBSONIC | BOTH | NO | TWO WAY PATH |
| 7 | DOOR | 7 | 5 | 8.00 | 2.00 | 0.50 | 0.97 | 1.52 | 1.26 | 1.39 | 0.70 | SUBSONIC | FORWARD | 10.34 | |
| 8 | DOOR | 7 | 5 | 8.00 | 2.00 | 0.50 | 0.97 | 1.51 | 1.24 | 1.38 | 0.69 | SUBSONIC | FORWARD | 10.34 | |
| 9 | DOOR | 8 | 4 | 8.00 | 2.00 | 1.00 | 0.24 | 1.43 | 1.47 | 1.45 | 0.72 | SUBSONIC | FORWARD | 10.34 | |
| 10 | DOOR | 9 | 10 | 8.00 | 2.00 | 1.00 | 0.24 | 1.49 | 1.48 | 1.49 | 0.74 | SUBSONIC | FORWARD | 10.34 | |
| 11 | DOOR | 10 | 5 | 8.00 | 2.00 | 0.35 | 1.13 | 1.25 | 1.24 | 1.24 | 0.62 | SUBSONIC | FORWARD | 10.34 | |
| 12 | DOOR | 10 | 4 | 8.00 | 2.00 | 0.25 | 1.19 | 1.24 | 1.24 | 1.24 | 0.62 | SUBSONIC | FORWARD | 10.34 | |
| 13 | DELETED | | | | | | | | | | | | | | |
| 14 | BLOW OUT PANEL~~OPEN SPACE~~ | 12 | 17 | 9.00 | 2.22 | 0.45 | 1.05 | 2.25 | 1.78 | 2.25 | 1.13 | SUBSONIC | FORWARD | 16.547 | TO ATMOSPHERE |
| 15 | BLOW OUT PANEL~~OPEN SPACE~~ | 13 | 17 | 9.00 | 2.22 | 0.45 | 1.05 | 2.25 | 1.78 | 2.25 | 1.13 | SUBSONIC | FORWARD | 16.547 | TO ATMOSPHERE |

# Table 6.2-12

## Subcompartment Vent Path Designation

## (SI Units)

| Flow Path No. | Type | Cell From | Cell To | P (m) | DH (m) | L/DH | T | K FORW | K REVER | K AVERA | K CONTAIN | Flow Condition | Flow Direction | Blow Out Pressure (kPaG) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | BLOW OUT PANEL~~OPEN SPACE~~ | 14 | 17 | 9.00 | 2.22 | 0.45 | 1.05 | 2.25 | 1.78 | 2.25 | 1.13 | SUBSONIC | FORWARD | 16.547 | TO ATMOSPHERE |
| 17 | BLOW OUT PANEL~~OPEN SPACE~~ | 15 | 17 | 9.00 | 2.22 | 0.45 | 1.05 | 2.25 | 1.78 | 2.25 | 1.13 | SUBSONIC | FORWARD | 16.547 | TO ATMOSPHERE |
| 18 | OPEN SPACE | 3 | 12 | 10.00 | 2.00 | 0.50 | 0.97 | 0.47 | 0.90 | 0.69 | 0.34 | SUBSONIC | BOTH | NO | TWO WAY PATH |
| 19 | OPEN SPACE | 5 | 14 | 10.00 | 2.00 | 0.50 | 0.97 | 0.48 | 0.93 | 0.71 | 0.35 | SUBSONIC | BOTH | NO | TWO WAY PATH |
| 20 | OPEN SPACE | 10 | 15 | 10.00 | 2.00 | 0.50 | 0.97 | 0.48 | 0.93 | 0.70 | 0.35 | SUBSONIC | BOTH | NO | TWO WAY PATH |
| 21 | OPEN SPACE | 4 | 13 | 10.00 | 2.00 | 0.50 | 0.97 | 0.47 | 0.90 | 0.69 | 0.34 | SUBSONIC | BOTH | NO | TWO WAY PATH |
| 22 | DELETED | | | | | | | | | | | | | | |
| 23 | HATCH | 11 | 18 | 13.60 | 3.40 | 0.29 | 1.16 | 2.09 | 1.41 | 1.75 | 0.87 | SUBSONIC | FORWARD | 10.34 | |
| 24 | DOOR | 18 | 19 | 8.00 | 2.00 | 0.30 | 1.16 | 1.97 | 1.97 | 1.97 | 0.98 | SUBSONIC | FORWARD | 10.34 | |
| 25 | DOOR | 19 | 20 | 8.00 | 2.00 | 0.15 | 1.25 | 2.07 | 2.07 | 2.07 | 1.04 | SUBSONIC | FORWARD | 10.34 | |
| 26 | DOOR | 20 | 5 | 8.00 | 2.00 | 1.00 | 0.24 | 1.22 | 0.82 | 1.02 | 0.51 | SUBSONIC | FORWARD | 10.34 | |
| 27 | DOOR | 20 | 21 | 8.00 | 2.00 | 0.15 | 1.25 | 2.07 | 2.07 | 2.07 | 1.04 | SUBSONIC | FORWARD | 10.34 | |
| 28 | DOOR | 21 | 22 | 8.00 | 2.00 | 0.30 | 1.16 | 1.97 | 1.97 | 1.97 | 0.98 | SUBSONIC | FORWARD | 10.34 | |
| 29 | DOOR | 18 | 22 | 8.00 | 2.00 | 0.15 | 1.25 | 2.07 | 2.07 | 2.07 | 1.04 | SUBSONIC | FORWARD | 10.34 | |
| 30 | DOOR | 22 | 23 | 8.00 | 2.00 | 1.00 | 0.24 | 1.49 | 1.63 | 1.56 | 0.78 | SUBSONIC | FORWARD | 10.34 | |

# Table 6.2-12 (Continued)
# Subcompartment Vent Path Designation
## (English Units)

| Flow Path No. | TYPE | CELL FROM | CELL TO | P (ft) | DH (ft) | L/DH | T | K FORW. | K REVER. | K AVERA. | K CONTAIN | FLOW COND. | FLOW DIRECTION | BLOW-OUT PRES (psig) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | DOOR | 1 | 2 | 26.25 | 6.56 | 1.00 | 0.24 | 1.56 | 1.61 | 1.58 | 0.79 | SUBSONIC | BOTH | NO | TWO WAY PATH |
| 2 | DOOR | 2 | 3 | 26.25 | 6.56 | 0.50 | 0.97 | 1.51 | 1.24 | 1.38 | 0.69 | SUBSONIC | FORWARD | 1.5 | |
| 3 | DOOR | 2 | 3 | 26.25 | 6.56 | 0.50 | 0.97 | 1.52 | 1.26 | 1.39 | 0.70 | SUBSONIC | FORWARD | 1.5 | |
| 4 | DOOR | 3 | 4 | 26.25 | 6.56 | 0.35 | 1.13 | 1.25 | 1.24 | 1.24 | 0.62 | SUBSONIC | FORWARD | 1.5 | |
| 5 | DOOR | 3 | 5 | 26.25 | 6.56 | 0.25 | 1.19 | 1.31 | 1.32 | 1.31 | 0.66 | SUBSONIC | FORWARD | 1.5 | |
| 6 | DOOR | 6 | 7 | 26.25 | 6.56 | 1.00 | 0.24 | 1.56 | 1.61 | 1.58 | 0.79 | SUBSONIC | BOTH | NO | TWO WAY PATH |
| 7 | DOOR | 7 | 5 | 26.25 | 6.56 | 0.50 | 0.97 | 1.52 | 1.26 | 1.39 | 0.70 | SUBSONIC | FORWARD | 1.5 | |
| 8 | DOOR | 7 | 5 | 26.25 | 6.56 | 0.50 | 0.97 | 1.51 | 1.24 | 1.38 | 0.69 | SUBSONIC | FORWARD | 1.5 | |
| 9 | DOOR | 8 | 4 | 26.25 | 6.56 | 1.00 | 0.24 | 1.43 | 1.47 | 1.45 | 0.72 | SUBSONIC | FORWARD | 1.5 | |
| 10 | DOOR | 9 | 10 | 26.25 | 6.56 | 1.00 | 0.24 | 1.49 | 1.48 | 1.49 | 0.74 | SUBSONIC | FORWARD | 1.5 | |
| 11 | DOOR | 10 | 5 | 26.25 | 6.56 | 0.35 | 1.13 | 1.25 | 1.24 | 1.24 | 0.62 | SUBSONIC | FORWARD | 1.5 | |
| 12 | DOOR | 10 | 4 | 26.25 | 6.56 | 0.25 | 1.19 | 1.24 | 1.24 | 1.24 | 0.62 | SUBSONIC | FORWARD | 1.5 | |
| 13 | DELETED | | | | | | | | | | | | | | |
| 14 | BLOW OUT PANEL~~OPEN SPACE~~ | 12 | 17 | 29.53 | 7.28 | 0.45 | 1.05 | 2.25 | 1.78 | 2.25 | 1.13 | SUBSONIC | FORWARD | 2.4 | TO ATMOSPHERE |
| 15 | BLOW OUT PANEL~~OPEN SPACE~~ | 13 | 17 | 29.53 | 7.28 | 0.45 | 1.05 | 2.25 | 1.78 | 2.25 | 1.13 | SUBSONIC | FORWARD | 2.4 | TO ATMOSPHERE |
| 16 | BLOW OUT PANEL~~OPEN SPACE~~ | 14 | 17 | 29.53 | 7.28 | 0.45 | 1.05 | 2.25 | 1.78 | 2.25 | 1.13 | SUBSONIC | FORWARD | 2.4 | TO ATMOSPHERE |

# Table 6.2-12 (Continued)
# Subcompartment Vent Path Designation
# (English Units)

| Flow Path No. | TYPE | CELL FROM | CELL TO | P (ft) | DH (ft) | L/DH | T | K FORW. | K REVER. | K AVERA. | K CONTAIN | FLOW COND. | FLOW DIRECTION | BLOW-OUT PRES (psig) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | BLOW OUT PANEL~~OPEN SPACE~~ | 15 | 17 | 29.53 | 7.28 | 0.45 | 1.05 | 2.25 | 1.78 | 2.25 | 1.13 | SUBSONIC | FORWARD | 2.4 | TO ATMOSPHERE |
| 18 | OPEN SPACE | 3 | 12 | 32.81 | 6.56 | 0.50 | 0.97 | 0.47 | 0.90 | 0.69 | 0.34 | SUBSONIC | BOTH | NO | TWO WAY PATH |
| 19 | OPEN SPACE | 5 | 14 | 32.81 | 6.56 | 0.50 | 0.97 | 0.48 | 0.93 | 0.71 | 0.35 | SUBSONIC | BOTH | NO | TWO WAY PATH |
| 20 | OPEN SPACE | 10 | 15 | 32.81 | 6.56 | 0.50 | 0.97 | 0.48 | 0.93 | 0.70 | 0.35 | SUBSONIC | BOTH | NO | TWO WAY PATH |
| 21 | OPEN SPACE | 4 | 13 | 32.81 | 6.56 | 0.50 | 0.97 | 0.47 | 0.90 | 0.69 | 0.34 | SUBSONIC | BOTH | NO | TWO WAY PATH |
| 22 | DELETED | | | | | | | | | | | | | | |
| 23 | HATCH | 11 | 18 | 44.62 | 11.15 | 0.29 | 1.16 | 2.09 | 1.41 | 1.75 | 0.87 | SUBSONIC | FORWARD | 1.5 | |
| 24 | DOOR | 18 | 19 | 26.25 | 6.56 | 0.30 | 1.16 | 1.97 | 1.97 | 1.97 | 0.98 | SUBSONIC | FORWARD | 1.5 | |
| 25 | DOOR | 19 | 20 | 26.25 | 6.56 | 0.15 | 1.25 | 2.07 | 2.07 | 2.07 | 1.04 | SUBSONIC | FORWARD | 1.5 | |
| 26 | DOOR | 20 | 5 | 26.25 | 6.56 | 1.00 | 0.24 | 1.22 | 0.82 | 1.02 | 0.51 | SUBSONIC | FORWARD | 1.5 | |
| 27 | DOOR | 21 | 20 | 26.25 | 6.56 | 0.15 | 1.25 | 2.07 | 2.07 | 2.07 | 1.04 | SUBSONIC | FORWARD | 1.5 | |
| 28 | DOOR | 21 | 22 | 26.25 | 6.56 | 0.30 | 1.16 | 1.97 | 1.97 | 1.97 | 0.98 | SUBSONIC | FORWARD | 1.5 | |
| 29 | DOOR | 18 | 22 | 26.25 | 6.56 | 0.15 | 1.25 | 2.07 | 2.07 | 2.07 | 1.04 | SUBSONIC | FORWARD | 1.5 | |
| 30 | DOOR | 22 | 23 | 26.25 | 6.56 | 1.00 | 0.24 | 1.49 | 1.63 | 1.56 | 0.78 | SUBSONIC | FORWARD | 1.5 | |
| 31 | DOOR | 23 | 24 | 26.25 | 6.56 | 1.00 | 0.24 | 1.59 | 1.48 | 1.53 | 0.77 | SUBSONIC | FORWARD | 1.5 | |

## Table 15.4-13

## MSLBA Analysis Results

| Exposure Location and Time Period/Duration | Maximum Calculated TEDE, Sv (rem) | Acceptance Criterion TEDE, Sv (rem) |
|---|---|---|
| EAB for any (worst) 2 hour period | | |
| Equilibrium Iodine Activity | 0.002 (0.2) | 0.025 (2.5) |
| Pre-incident Spike | 0.029 (2.9) | 0.25 (25) |
| Outer Boundary of LPZ for the Duration of the Accident (30 days) | | |
| Equilibrium Iodine Activity | <0.001 (<0.1) | 0.025 (2.5) |
| Pre-incident Spike | 0.003 (0.3) | 0.25 (25) |
| Control Room Operator Dose for the Duration of the Accident (30 days) | | |
| Equilibrium Iodine Activity | <0.001 (<0.1) | 0.05 (5) |
| Pre-incident Spike | <0.001 (<0.1) | 0.05 (5) |