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April 2, 1980

Docket Nos. 50-277  
50-278

Mr. William F. Kane  
Bulletins and Orders Task Force  
US Nuclear Regulatory Commission  
Washington, DC 20555

Dear Mr. Kane:

The attached pages contain revisions and additions to the information requested by the Bulletins and Orders Task Force and included in our submittal of November 16, 1979. The following changes were made to this data:

P. 39 - delete extraneous information

P. 40 - add items numbered 9 & 10

Table of Primary Containment Isolation System Data -  
add columns 9 & 10 and associated data

These errors and omissions were an oversight and were discovered during our follow-up review of the original submittal. If you have any questions on these revisions, please call.

Very truly yours,

*JW Gallagher*

Attachment

6006

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1/1

P

8004080

349

- B. HPCI Stm. Tunnel High Temp.  
200ΔF)
- C. HPCI Stm. Line Low Pressure (100 psig)\*
- D. High Drywell Pressure (2 psig)
- E. HPCI Stm. Line Isolated
- F. Reactor Low Water Level (-48")

- Group VI
- Reactor Low Water Level (-144")
  - High Drywell Pressure (2 psig)

- Group VII
- LPCI Initiation:
- Reactor Low Water Level (-144")
  - High Drywell Pressure (2 psig)  
& Reactor Low Pressure (450 psig)

- RM - Remote Manual
- M - Manual (local only)
- LC - Locked Closed
- TT - Turbine Trip\*
- RMP - Push Button, momentary contact opens valve  
for test

\* Process Signals

4. "S" indicates standard closing time. The standard minimum closing rate for automatic isolation valves is based on a nominal line size of 12 inches. Using the standard closing rate, a 12-inch line is isolated in 60 seconds. Conversion to closing time can be made on this basis using the actual size of the line in which the valve is installed.
5. The power supplies for the valves are identified as one of the following:

- A - safeguard AC channel A (onsite emergency diesel buses)
- B - safeguard AC channel B (onsite emergency diesel buses)
- C - safeguard AC channel C (onsite emergency diesel buses)
- D - safeguard AC channel D (onsite emergency diesel buses)
- E - safeguard DC channel A (onsite emergency diesel buses)
- F - safeguard DC channel B (onsite emergency diesel buses)
- N - non-safeguard

For cable routing purposes, channels A&C - AC and A-DC are assigned to Division I and channels B&D - AC and B-DC are assigned to Division II.

The following special notes apply:

1. The power for valve 10-25A automatically transfers between A and C depending upon availability. The controls are assigned to safeguard channel A. The power for valve 10-25B automatically transfers between B and D depending upon availability. The controls are assigned to safeguard channel C.
2. Testable check valve, power and controls do not affect isolation function.
3. Valve control cables are not presently assigned to a safeguard channel. Modification in progress to supply valves with correct designations.
4. Valves are not powered from onsite supplies and control cables are not assigned to safeguard raceways. Modification in progress to correct concern.
5. Controls for the TIP ball, shear and purge valves are not separated and are not assigned to safeguard channels.
6. Valve control cables are not presently assigned to a safeguard channel. Modification in progress to supply valve with correct designation, diverse isolation signal, and proper reset logic.
6. Position indication for the valves is identified as follows:
  - D. direct indication from position switches at the valve.
  - I. indirect indication - usually light is electrically parallel to solenoid.
  - N. no indication as to valve position.Position is indicated in the control room.
7. Isolate only if in shutdown cooling mode.
8. Modification in progress to cap this line.
9. Symbols used to indicate type of leak test are as follows:
  - C - Local Leak Rate Test performed per 10 CFR 50, App. J.
  - N - Local Leak Rate Test is not performed.
  - A - Tested during Integrated Leak Rate Test
  - O - Operability and Leak Rate Tested with vessel hydrostatic test.
10. Piping Classification Group per FSAR, App. A.

## PRIMARY CONTAINMENT ISOLATION SYSTEM DATA

Page 1

| Penetration Number | Line Size | Line Description                                                               | ESF (Yes/No) | Fig. No. | Fluid       | Valve Number      | Isolation Group (Signal) | Valve Location | Valve Type | Mode of Actuation |                     | Closure Time (Sec.) | Power Source | Position Indication | Valve Position |          |               |               | Leak Test Type | Pipe Class |
|--------------------|-----------|--------------------------------------------------------------------------------|--------------|----------|-------------|-------------------|--------------------------|----------------|------------|-------------------|---------------------|---------------------|--------------|---------------------|----------------|----------|---------------|---------------|----------------|------------|
|                    |           |                                                                                |              |          |             |                   |                          |                |            | Primary Actuation | Secondary Actuation |                     |              |                     | Normal         | Shutdown | Post-Accident | Power Failure |                |            |
| N-7A to D          | 26"       | Main Steam                                                                     | No           | 1        | Steam       | AO-2-80<br>A to D | I(A,B,C,D & E)           | Inside         | GB         | Inst. Gas         | Spring              | 3 to 10             | A or E       | D                   | O              | C        | C             | C             | C              | I          |
|                    |           |                                                                                |              |          |             | AO-2-86<br>A to D | I(A,B,C,D & E)           | Outside        | GB         | Inst. Air         | "                   | 3 to 10             | B or F       | D                   | O              | C        | C             | C             | C              |            |
| N-8                | 3"        | Main Steam                                                                     | No           | 1        | Steam Water | MO-2-74           | I(A,B,C,D & E)           | Inside         | GT         | AC Motor          | Manual              | 15                  | A            | D                   | C              | O        | C             | as is         | C              | I          |
|                    |           |                                                                                |              |          |             | MO-2-77           | I(A,B,C,D & E)           | Outside        | GT         | AC Motor          | Manual              | 15                  | F            | D                   | C              | O        | C             | as is         | C              |            |
| N-9A               | 24"       | Feedwater -<br>- feedwater<br>- feedwater<br>- startup rec.<br>- HPCI          | Yes          | 2        | Water       | 2-28A             | -                        | Inside         | CK         | flow              | -                   | -                   | -            | -                   | O              | C        | O             | -             | C              | I          |
|                    |           |                                                                                | No           |          |             | 2-96A             | -                        | Outside        | CK         | flow              | -                   | -                   | -            | -                   | O              | C        | C             | -             | C              |            |
|                    |           |                                                                                | No           |          |             | MO-2-38A          | II(A,B,F)                | "              | GT         | AC Motor          | Manual              | 50                  | D            | D                   | C              | C        | C             | as is         | C              |            |
|                    |           |                                                                                | Yes          |          |             | MO-23-19          | RM                       | "              | GT         | DC Motor          | "                   | 20                  | F            | D                   | C              | C        | O             | as is         | C              |            |
| N-9B               | 24"       | Feedwater<br>- feedwater<br>- feedwater<br>- RCIC<br>- RWCUC<br>- startup rec. | No           | 2        | Water       | 2-28B             | -                        | Inside         | CK         | flow              | -                   | -                   | -            | -                   | O              | C        | O             | -             | C              | I          |
|                    |           |                                                                                | No           |          |             | 2-96B             | -                        | Outside        | CK         | flow              | -                   | -                   | -            | -                   | O              | C        | C             | -             | C              |            |
|                    |           |                                                                                | No           |          |             | MO-13-21          | RM                       | "              | GT         | DC Motor          | Manual              | 15                  | E            | D                   | C              | O        | O             | as is         | C              |            |
|                    |           |                                                                                | No           |          |             | MO-12-68          | II(A,C,D, & G)           | "              | GB         | AC Motor          | "                   | 5                   | B            | D                   | O              | O        | C             | as is         | C              |            |
|                    |           |                                                                                | No           |          |             | MO-2-38B          | II(A,B,F)                | "              | GT         | AC Motor          | "                   | 50                  | B            | E                   | C              | C        | C             | as is         | C              |            |
| N-10               | 3"        | Steam to RCIC Turbine                                                          | No           | 3        | Steam       | MO-13-15          | IV(A,B,C)                | Inside         | GT         | AC Motor          | "                   | 15                  | B            | D                   | O              | C        | O             | as is         | C              | I          |
|                    |           |                                                                                |              |          |             | MO-13-16          | IV(A,B,C)                | Outside        | GT         | DC Motor          | "                   | 15                  | E            | D                   | O              | C        | O             | as is         | C              |            |
| N-11               | 10"       | Steam to HPCI Turbine                                                          | Yes          | 3        | Steam       | MO-23-15          | V(A,B,C)                 | Inside         | GT         | AC Motor          | "                   | 15                  | A            | D                   | O              | C        | O             | as is         | C              | I          |
|                    |           |                                                                                |              |          |             | MO-23-16          | V(A,B,C)                 | Outside        | GT         | DC Motor          | "                   | 15                  | F            | D                   | O              | C        | O             | as is         | C              |            |
| N-12               | 20"       | RHR Shutdown Cooling Suction                                                   | No           | 4        | Water       | MO-10-17          | II(A,B,E)                | Inside         | GT         | AC Motor          | "                   | 32                  | F            | D                   | C              | O        | C             | as is         | C              | I          |
|                    |           |                                                                                |              |          |             | MO-10-18          | II(A,B,E)                | Outside        | GT         | DC Motor          | "                   | 32                  | A            | D                   | C              | O        | C             | as is         | C              |            |
| N-13,A,B,24"       | 24"       | RHR Shutdown Cooling Return<br>HPCI Injection                                  | Yes          | 5        | Water       | MO-10-25A         | II(A,B)                  | Outside        | GT         | AC Motor          | "                   | 34                  | I            | D                   | C              | O        | C             | as is         | C              | I          |
|                    |           |                                                                                | Yes          |          |             | AO-10-46<br>A,B   | -                        | Inside         | CK         | Flow              | -                   | -                   | 2            | D                   | C              | O        | C             | -             | N              |            |
|                    |           |                                                                                | No           |          |             | AO-10-16<br>A,B   | RMP                      | "              | DCV        | Inst. Gas         | Spring              | 5                   | 3            | D                   | C              | C        | C             | C             | N              |            |

## PRIMARY CONTAINMENT ISOLATION SYSTEM DATA

Page 2

| Penetration Number | Line Size  | Line Description               | ESF (Yes/No) | Fig. No. | Fluid | Valve Number                               | Isolation Group (Signal)   | Valve Location     | Valve Type       | Mode of Actuation      |                     | Closure Time (Sec.) | Power Source     | Position Indication | Valve Position   |                  |                  |                      | Leak Test Type   | Pipe Class |
|--------------------|------------|--------------------------------|--------------|----------|-------|--------------------------------------------|----------------------------|--------------------|------------------|------------------------|---------------------|---------------------|------------------|---------------------|------------------|------------------|------------------|----------------------|------------------|------------|
|                    |            |                                |              |          |       |                                            |                            |                    |                  | Primary Actuation      | Secondary Actuation |                     |                  |                     | Normal           | Shutdown         | Post-Accident    | Power Failure        |                  |            |
| N-14               | 6"         | R/CU Pump Suction              | No           | 6        | Water | Mo-12-15<br>Mo-12-18                       | II(A,C,D,G)<br>II(A,C,D,G) | Inside<br>Outside  | GT<br>GT         | AC Motor<br>DC Motor   | Manual<br>"         | 5<br>5              | A<br>P           | D<br>D              | 0<br>0           | 0<br>0           | C<br>C           | as<br>is             | C<br>C           | I          |
| N-16<br>A,B        | 12"        | Core Spray Pump Discharge      | Yes          | 5        | Water | Mo-14-12<br>A,B                            | RM                         | Outside            | GT               | AC Motor               | "                   | 12                  | C,D              | D                   | C                | C                | 0                | as<br>is             | C                | II         |
|                    |            |                                | Yes          |          |       | Mo-14-13<br>A,B                            | -                          | Inside             | CK               | Flow                   | -                   | -                   | 2                | D                   | C                | C                | 0                | -                    | N                |            |
|                    |            |                                | No           |          |       | AD-14-15<br>A,B                            | RMP                        | "                  | DCV              | Inst. Gas              | Spring              | 5                   | 3                | D                   | C                | C                | C                | C                    | N                |            |
|                    |            |                                | No           | 7        | Water | Mo-10-32<br>Mo-10-33                       | II(A,B,E)<br>II(A,B,E)     | "<br>Outside       | GT<br>GT         | AC Motor<br>DC Motor   | Manual<br>"         | 5<br>5              | A<br>P           | D<br>D              | C<br>C           | 0<br>0           | C<br>C           | as<br>is<br>as<br>is | C<br>C           | I          |
| N-18               | 3"         | Drywell Fl. Dr. Pump Disch.    | No           | 8        | Water | AO-20-82<br>AO-20-83                       | II(A,B)<br>II(A,B)         | Outside<br>"       | DCV<br>DCV       | Inst. Air<br>Inst. Air | Spring<br>"         | 5<br>5              | A<br>B           | D<br>D              | 0<br>0           | C<br>C           | C<br>C           | C<br>C               | C<br>C           | III        |
| N-19               | 3"         | Drywell Equip. Dr. Pump Disch. | No           | 8        | Water | AO-20-94<br>AO-20-95                       | II(A,B)<br>II(A,B)         | "<br>"             | DCV<br>DCV       | Inst. Air<br>Inst. Air | "<br>"              | 5<br>5              | A<br>B           | D<br>D              | 0<br>0           | C<br>C           | C<br>C           | C<br>C               | C<br>C           | III        |
| N-21               | 1"         | Service Air Supply             | No           | 9        | Air   | -<br>-                                     | LC<br>LC                   | Inside<br>Outside  | GB<br>GB         | -<br>-                 | -<br>-              | -<br>-              | -<br>-           | -<br>-              | C<br>C           | C<br>C           | C<br>C           | -<br>-               | C<br>C           | III        |
| N-22               | 1"         | Inst. Gas Supply               | No           | 10       | Air   | AO-2969A                                   | II(A,B)                    | Outside<br>Outside | CK<br>DCV        | Flow<br>Inst. Air      | Spring              | 5                   | A                | -<br>D              | 0<br>0           | 0<br>0           | C<br>C           | -<br>C               | C<br>C           | III        |
| N-23               | 4"         | RBCW to Recirc Pumps           | No           | 11       | Water | MO-2373                                    | RM                         | Outside            | GT               | AC Motor               | Manual              | 12                  | 4                | D                   | 0                | 0                | C                | as<br>is             | N                | III        |
| N-24               | 4"         | RBCW from Recirc Pumps         | No           | 11       | Water | MO-2374                                    | RM                         | Outside            | GT               | AC Motor               | "                   | 12                  | 4                | D                   | 0                | 0                | C                | as<br>is             | N                | III        |
| N-25<br>& 205B     | 18"<br>20" | Drywell and Torus Purge Supply | No           | 12       | Air   | AO-2505                                    | III                        | "                  | B                | Inst. Air              | Spring              | 5                   | B                | D                   | C                | 0                | C                | C                    | C                | II         |
|                    |            |                                |              |          |       | AO-2519<br>AO-2520<br>AO-2521A<br>AO-2521B | III<br>III<br>III<br>III   | "<br>"<br>"<br>"   | B<br>B<br>B<br>B | "<br>"<br>"<br>"       | "<br>"<br>"<br>"    | 5<br>5<br>5<br>5    | B<br>A<br>B<br>B | D<br>D<br>D<br>D    | C<br>C<br>C<br>C | C<br>C<br>C<br>C | C<br>C<br>C<br>C | C<br>C<br>C<br>C     | C<br>C<br>C<br>C |            |

## PRIMARY CONTAINMENT ISOLATION SYSTEM DATA

Page 3

| Penetration Number | Line Size | Line Description                   | ESF (Yes/No) | Fig. No. | Fluid         | Valve Number | Isolation Group (Signal) | Valve Location | Valve Type | Mode of Actuation |                     | Closure Time (Sec.) | Power Source | Position Indication | Valve Position |          |               |               | Leak Test Type | Pipe Class |
|--------------------|-----------|------------------------------------|--------------|----------|---------------|--------------|--------------------------|----------------|------------|-------------------|---------------------|---------------------|--------------|---------------------|----------------|----------|---------------|---------------|----------------|------------|
|                    |           |                                    |              |          |               |              |                          |                |            | Primary Actuation | Secondary Actuation |                     |              |                     | Normal         | Shutdown | Post-Accident | Power Failure |                |            |
| N-26               | 18"       | Drywell Purge Exhaust              | -            | 13       | Air           | AO-2523      | III                      | Outside        | DCV        | Inst. Air         | Spring              | 5                   | A            | D                   | C              | C        | C             | C             | C              | I          |
|                    |           |                                    | -            |          |               | AO-2502A     | RM                       | "              | CK(2)      | Flow              | "                   | "                   | "            | "                   | C              | C        | C             | C             | C              |            |
|                    |           |                                    | -            |          |               | 9-26A        | "                        | "              | B          | Inst. Air         | Spring              | 5                   | 3            | D                   | C              | C        | C             | C             | C              |            |
|                    |           |                                    | -            |          |               | "            | "                        | "              | VB         | Flow              | "                   | "                   | "            | "                   | C              | C        | C             | C             | C              |            |
|                    |           |                                    | -            |          |               | "            | "                        | "              | GB         | Manual            | "                   | "                   | "            | "                   | O              | O        | O             | "             | A              |            |
|                    |           |                                    | Yes          |          |               | AO-2509      | III                      | Outside        | DCV        | Inst. Air         | Spring              | 5                   | A            | D                   | O              | O        | O             | C             | C              |            |
|                    |           |                                    | Yes          |          |               | AO-2510      | III                      | "              | DCV        | "                 | "                   | 5                   | B            | D                   | C              | C        | O             | C             | C              |            |
|                    |           |                                    | No           |          |               | AO-2506      | III                      | "              | B          | "                 | "                   | 5                   | A            | D                   | C              | O        | C             | C             | C              |            |
|                    |           |                                    | No           |          |               | AO-2507      | III                      | "              | B          | "                 | "                   | 5                   | B            | D                   | C              | O        | C             | C             | C              |            |
|                    |           |                                    | No           |          |               | AO-4235      | III                      | "              | DCV        | "                 | "                   | 5                   | B            | D                   | O              | O        | C             | C             | C              |            |
|                    |           |                                    | No           |          |               | SV-2671G     | III                      | "              | SV         | AC Coil           | "                   | "                   | A            | I                   | O              | O        | C             | C             | C              |            |
|                    |           |                                    | No           |          |               | SV-2978G     | III                      | "              | SV         | DC Coil           | "                   | "                   | B            | I                   | O              | O        | C             | C             | C              |            |
| N-27E, F           | 1"        | Inst. Lines-Core Plate Pressure    | -            | 16       | Water         | -            | 2517                     | Inside         | RD         | XF-CV             |                     |                     |              |                     |                |          |               |               | A, O           | I          |
|                    |           |                                    | -            |          |               | -            |                          | Outside        | XF-CV      |                   |                     |                     |              |                     |                |          |               |               | A, O           |            |
| N-28A, B, C, E, F  | 1"        | Inst. Lines RPV Level & Pressure   | -            | 16       | Water / Steam | -            | 17A, 19A, 11, 13A, 15A   | Inside         | RD         | XFCV              |                     |                     |              |                     |                |          |               |               | A, O           | I          |
|                    |           |                                    | -            |          |               | -            |                          | Outside        | XFCV       |                   |                     |                     |              |                     |                |          |               |               | A, O           |            |
| N-28D              | 1"        | Inst. Line - RPV Head Pressure     | -            | 16       | Steam         | -            | 23                       | Inside         | RO         | XF CV             |                     |                     |              |                     |                |          |               |               | A, O           | I          |
|                    |           |                                    | -            |          |               | -            |                          | Outside        | XF CV      |                   |                     |                     |              |                     |                |          |               |               | A, O           |            |
| N-29A, B, E, F     | 1"        | Inst. Lines - RPV Level & Pressure | -            | 16       | Water / Steam | -            | 17B, 19B, 13B, 15B       | Inside         | RO         | XFCV              |                     |                     |              |                     |                |          |               |               | A, O           | I          |
|                    |           |                                    | -            |          |               | -            |                          | outside        | XFCV       |                   |                     |                     |              |                     |                |          |               |               | A, O           |            |
| N-30A, B, C, D,    | 1"        | Inst. Lines - Main Stm. Pressure   | -            | 16       | Steam         | -            | 23A, C, E, G             | Inside         | RO         | XFCV              |                     |                     |              |                     |                |          |               |               | A, O           | I          |
|                    |           |                                    | -            |          |               | -            |                          | Outside        | XFCV       |                   |                     |                     |              |                     |                |          |               |               | A, O           |            |
| N-30E, F           | 1"        | Inst. Lines - Recirc Loop B Flow   | -            | 16       | Water         | -            | 64 C, D                  | Inside         | RO         | XFCV              |                     |                     |              |                     |                |          |               |               | A, O           | I          |
|                    |           |                                    | -            |          |               | -            |                          | Outside        | XFCV       |                   |                     |                     |              |                     |                |          |               |               | A, O           |            |



## PRIMARY CONTAINMENT ISOLATION SYSTEM DATA

Page 4

| Penetration Number | Line Size | Line Description                        | ESF (Yes/No) | Fig. No. | Fluid | Valve Number        | Isolation Group (Signal) | Valve Location     | Valve Type     | Mode of Actuation            |                     | Closure Time (Sec.) | Power Source | Position Indication | Valve Position |          |               |               | Leak Test Type | Pipe Class |
|--------------------|-----------|-----------------------------------------|--------------|----------|-------|---------------------|--------------------------|--------------------|----------------|------------------------------|---------------------|---------------------|--------------|---------------------|----------------|----------|---------------|---------------|----------------|------------|
|                    |           |                                         |              |          |       |                     |                          |                    |                | Primary Actuation            | Secondary Actuation |                     |              |                     | Normal         | Shutdown | Post-Accident | Power Failure |                |            |
| N-31 A to O        | 1"        | Inst. Lines - Recirc Pump Seal Pressure | -            | 17       | Water | 7A,B<br>8A,B        |                          | Outside<br>Outside | XPC V<br>XPC V |                              |                     |                     |              |                     |                |          |               |               | A,O<br>A,O     | I          |
| N-32A, B           | 1"        | Inst lines - Recirc loop A Flow         | -            | 16       | Water | -<br>63A,B          |                          | Inside<br>Outside  | RO<br>XPC V    |                              |                     |                     |              |                     |                |          |               |               | A,O<br>A,O     | I          |
| N-32C, D           | 3/4"      | ILRT Connections No.                    | -            | 18       | Air   | -                   |                          | Outside            | GB(2)          |                              |                     |                     |              |                     | C              | C        | C             | -             | C              | III        |
| N-32E, F           | 1"        | Inst Lines - C.S.Inj. Press.            | -            | 16       | Water | -<br>30 A,B         |                          | Inside<br>Outside  | RO<br>XPCV     |                              |                     |                     |              |                     |                |          |               |               | A,O<br>A,O     | I          |
| N-33A, B, C, D,    | 1"        | Inst. Lines - Recirc Pump ΔP            | -            | 16       | Water | -<br>62A, B, C, D   |                          | Inside<br>Outside  | RO<br>XPCV     |                              |                     |                     |              |                     |                |          |               |               | A,O<br>A,O     | I          |
| N-33F              | 1"        | Inst. Line - Drywell Press.             | -            | 19       | Air   | -                   |                          | Outside            | GB             |                              |                     |                     |              |                     |                |          |               |               | A              | III        |
| N-34A to D         | 1"        | Inst. Lines Main stm. Press.            | -            | 16       | Steam | -<br>73, B, D, F, H |                          | Inside<br>Outside  | RO<br>XPC V    |                              |                     |                     |              |                     |                |          |               |               | A              | I          |
| N-34E, F           | 1"        | Inst Lines - HPCI Stm Press.            | -            | 16       | Steam | -<br>37A, B         |                          | Inside<br>Outside  | RO<br>XPC V    |                              |                     |                     |              |                     |                |          |               |               | A,O<br>A,O     | I          |
| N-35 A to E        | 3/8"      | Tip Drives                              | No           | 20       | Air   | -<br>-              | II(A,B)<br>RM            | Outside<br>Outside | BL<br>XV       | AC Coil<br>DC Squib          | Spring<br>-         | -<br>-              | 5<br>5       | D<br>I              | O<br>O         | C<br>O   | C<br>C        | C<br>C        | A<br>A         | III        |
| N-35F              | 1"        | Tip Purge                               | No           | 14       | Air   | -<br>7-113          | -<br>II(A,B.)            | Outside<br>Outside | CK<br>5 V      | Flow<br>AC Coil              | -<br>-              | -<br>-              | -<br>5       | -<br>I              | O<br>C         | C<br>C   | C<br>C        | -<br>C        | A<br>A         | III        |
| N-36               | 4"        | CRD Return (2)                          | No           | 21       | Water | 3-113<br>3-110      | -<br>-                   | Inside<br>Outside  | CK<br>CK       | Flow<br>Flow                 | -<br>-              | -<br>-              | -<br>-       | -<br>-              | C<br>C         | C<br>C   | C<br>C        | -<br>-        | C<br>C         | I          |
| N-37 A to D        | 1"        | CRD Insert                              | Yes          | 22       | Water | -                   | -                        | Inside<br>Outside  | CK<br>HCU      | Flow<br>AC Coils<br>Int. Air | -<br>-/<br>Spring   | -<br>-              | -<br>N       | -<br>I              | C<br>C         | C<br>C   | C<br>C        | C<br>C        | N<br>N         | I          |

PRIMARY CONTAINMENT ISOLATION SYSTEM DATA

Page 5

| Penetration Number | Line Size | Line Description                    | ESF (Yes/No) | Fig. No. | Fluid  | Valve Number | Isolation Group (Signal) | Valve Location | Valve Type | Mode of Actuation  |                     | Closure Time (Sec.) | Power Source | Position Indication | Valve Position |          |               |               | Leak Test Type | Pipe Class |
|--------------------|-----------|-------------------------------------|--------------|----------|--------|--------------|--------------------------|----------------|------------|--------------------|---------------------|---------------------|--------------|---------------------|----------------|----------|---------------|---------------|----------------|------------|
|                    |           |                                     |              |          |        |              |                          |                |            | Primary Actuation  | Secondary Actuation |                     |              |                     | Normal         | Shutdown | Post-Accident | Power Failure |                |            |
| N-38 A to D        | 1"        | CRD Withdrawal                      | Yes          | 22       | Water  | -            | -                        | Outside        | HC U       | AC Coils/Inst. Air | -/Spring            | -                   | N            | I                   | C              | C        | C/O           | C/O           | N              | I          |
| N-39A,B            | 1 1/4"    | RHR Containment Spray-3HR           | Yes          | 23       | Water  | MO-10-31A    | B VII                    | Outside        | GT         | AC Motor           | Manual              | 11                  | C,D          | D                   | C              | C        | O             | as is         | C              | I          |
|                    |           | -RHR                                | Yes          |          | air    | MO-10-26A    | B VII                    | Outside        | GT         | AC Motor           | Manual              | 11                  | C,D          | D                   | C              | C        | O             | as is         | C              | I          |
|                    |           | -CAD                                | Yes          |          |        | SV-4948A     | RM                       | Outside        | SV         | AC Coil            | -                   | -                   | C,D          | N                   | C              | C        | O             | C             | C              | I          |
|                    |           | -CAD                                | Yes          |          |        | SV-4949A     | RM                       | Outside        | SV         | AC Coil            | -                   | -                   | C,D          | N                   | C              | C        | O             | C             | C              | I          |
|                    |           | -CAD                                | Yes          |          |        | -            | -                        | Outside        | CK         | Flow               | -                   | -                   | -            | -                   | C              | C        | O             | -             | N              | I          |
| N-40 A to D        | 1"        | Inst Lines - Jet Pumps              | -            | 14       | Water  | -            | -                        | Inside Outside | RO XFCV    |                    |                     |                     |              |                     |                |          |               |               | A,O A,O        | I          |
| N-41               | 3/4"      | Recirc Loop Sample                  | No           | 24       | Water  | AO-2-39      | I(A,B,C,D,E)             | Inside         | DCV        | Inst Gas           | Spring              | 5                   | A            | D                   | C              | C        | C             | C             | C              | I          |
|                    |           |                                     |              |          |        | AO-2-40      | I(A,B,C,D,E)             | Outside        | DCV        | Inst Air           | Spring              | 5                   | B            | D                   | C              | C        | C             | C             | C              | I          |
| N-42               | 1 1/2"    | Standby Liquid Control              | No           | 25       | Sodium | 11-16        | -                        | Outside        | CK         | Flow               | -                   | -                   | -            | -                   | C              | C        | C             | -             | C              | I          |
|                    |           |                                     |              |          |        | 11-17        | -                        | Inside         | CK         | Flow               | -                   | -                   | -            | -                   | C              | C        | C             | -             | C              | I          |
| N-46A,B            | 1"        | Inst Lines-Unit 3, Drywell Press.   | Yes          | 19       | Air    | 10-53A,C     | -                        | Outside        | GB         |                    |                     |                     |              |                     |                |          |               |               | A              | I          |
|                    |           |                                     |              |          |        | 10-60A,C     | -                        | Outside        | GB         |                    |                     |                     |              |                     |                |          |               |               | A              | I          |
| N-49B,C            | 1"        | Inst Lines-Unit 3, Drywell Press.   | Yes          | 19       | Air    | 10-53B,D     |                          | Outside        | GB         |                    |                     |                     |              |                     |                |          |               |               | A              | I          |
|                    |           |                                     |              |          |        | 10-60B,D     |                          | Outside        | GB         |                    |                     |                     |              |                     |                |          |               |               | A              | I          |
| N-49E,F            | 1"        | Inst Lines-Unit 2 Drywell Press.    | Yes          | 19       | Air    | 10-53A,C     |                          | Outside        | GB         |                    |                     |                     |              |                     |                |          |               |               | A              | I          |
|                    |           |                                     |              |          |        | 10-60A.C.    |                          | Outside        | GB         |                    |                     |                     |              |                     |                |          |               |               | A              | I          |
| N-50A              | 1"        | Inst Lines -Recirc - Suction Press. | -            | 16       | Water  | -            |                          | Inside         | RO         |                    |                     |                     |              |                     |                |          |               |               | A,O            | I          |
|                    |           |                                     |              |          |        | 305A         |                          | Outside        | XFCV       |                    |                     |                     |              |                     |                |          |               |               | A,O            | I          |
| N-50B,C            | 1"        | Inst Lines -RCIC                    | -            | 16       | Steam  | 54 A,D       |                          | Inside         | RO         |                    |                     |                     |              |                     |                |          |               |               | A,O            | I          |
| N-50 D,E           | 1"        | Inst. Lines RWCU                    |              | 6        | Water  | 125A,B       |                          | Outside        | XFCV       |                    |                     |                     |              |                     |                |          |               |               | A,O            | I          |
| N-51A,B            | 1"        | CACs Sample Lines                   | No           | 26       | Air    | 66F,B        |                          | Inside         | RO         |                    |                     |                     |              |                     |                |          |               |               | A,O            | I          |
|                    |           |                                     |              |          |        | SV-2671E,D   | III                      | Outside        | XFCV SV    | AC Coil            | -                   | -                   | A,A          | I                   | O              | O        | C             | C             | A,O C          | II         |
|                    |           |                                     |              |          |        | SV-2978E,D   | III                      | Outside        | SV         | DC Coil            | -                   | -                   | B,B          | I                   | O              | O        | C             | C             | C              |            |



## PRIMARY CONTAINMENT ISOLATION SYSTEM DATA

Page 6

| Number | Line Size | Line Description                           | EST (Yes/No) | File No. | Fluid | Valve Number | Isolation Group (Signal) | Valve Location | Valve Type | Mode of Actuation |                     | Closure Time (Sec.) | Power Source | Position Indication | Valve Position |          |               |               | Leak Test Type | Pipe Class |
|--------|-----------|--------------------------------------------|--------------|----------|-------|--------------|--------------------------|----------------|------------|-------------------|---------------------|---------------------|--------------|---------------------|----------------|----------|---------------|---------------|----------------|------------|
|        |           |                                            |              |          |       |              |                          |                |            | Primary Actuation | Secondary Actuation |                     |              |                     | Normal         | Shutdown | Post-Accident | Power Failure |                |            |
| C      | 1"        | CACS Sample Line                           | NO           | 27       | Air   | SV-2671C     | III                      | Outside        | SV         | AC Coil           | -                   | -                   | A            | I                   | O              | O        | C             | C             | C              | II         |
|        |           | -CACS                                      | "            |          |       | SV-2578C     | III                      | Outside        | SV         | DC Coil           | -                   | -                   | B            | I                   | O              | O        | C             | C             | C              |            |
|        |           | -CAD                                       | Yes          |          |       | SV-4966C     | RM                       | Outside        | SV         | AC Coil           | -                   | -                   | C            | N                   | C              | C        | O             | C             | C              |            |
|        |           | -CAD                                       | Yes          |          |       | SV-4961C     | RM                       | Outside        | SV         | AC Coil           | -                   | -                   | C            | N                   | C              | C        | O             | C             | C              |            |
|        |           | -Rad Gas                                   | No           |          |       | SV-4966C     | RM                       | Outside        | SV         | AC Coil           | -                   | -                   | C            | N                   | C              | C        | O             | C             | C              |            |
| D      | 1"        | CACS Sample Return                         | No           | 28       | Air   | -            | -                        | Outside        | CK         | Flow              | -                   | -                   | -            | -                   | O              | O        | C             | -             | C              | II         |
|        |           |                                            |              |          |       | SV-2980      | III                      | Outside        | SV         | DC Coil           | -                   | -                   | B            | I                   | O              | O        | C             | C             | C              |            |
| E      | 1"        | Inst Line - Recirc Suction Pressure        | -            | 16       | Water | -            | -                        | Inside         | RO         | -                 | -                   | -                   | -            | -                   | -              | -        | -             | -             | A,O            | I          |
|        |           |                                            |              |          |       | 305B         |                          | Outside        | XFCV       | -                 | -                   | -                   | -            | -                   | -              | -        | -             | -             | A,O            |            |
| F      | 1"        | Inst Line - Core Plate Pressure            | -            | 16       | Water | -            | -                        | Inside         | RO         | -                 | -                   | -                   | -            | -                   | -              | -        | -             | -             | A,O            | I          |
|        |           |                                            |              |          |       | 33           |                          | Outside        | XFCV       | -                 | -                   | -                   | -            | -                   | -              | -        | -             | -             | A,O            |            |
| G      | 1"        | Inst Gas Supply                            | No           | 10       | Air   | -            | -                        | Outside        | CK         | Flow              | -                   | -                   | -            | -                   | O              | O        | C             | -             | C              | III        |
|        |           |                                            |              |          |       | AO-2969B     | II(A,B)                  | Outside        | DCV        | Inst Air          | Spring              | 5                   | B            | D                   | O              | O        | C             | C             | C              |            |
| H      | 8"        | Chilled Wtr. from Drywell coolers loop A   | NO           | 29       | Water | MO-2201B     | RM                       | Outside        | GT         | AC Motor          | Manual              | 42                  | 3            | D                   | O              | O        | C             | as is         | N              | III        |
|        |           |                                            |              |          |       |              |                          |                |            |                   |                     |                     |              |                     |                |          |               |               |                |            |
| I      | 8"        | Chilled water from drywell coolers, Loop B | NO           | 29       | Water | Mo-2200B     | RM                       | Outside        | GT         | AC Motor          | Manual              | 42                  | 3            | D                   | O              | O        | C             | as is         | N              | III        |
|        |           |                                            |              |          |       |              |                          |                |            |                   |                     |                     |              |                     |                |          |               |               |                |            |
| J      | 8"        | Chilled wtr. from drywell coolers Loop B   | No           | 29       | Water | Mo-2200A     | RM                       | Outside        | GT         | AC Motor          | Manual              | 42                  | 3            | D                   | O              | O        | C             | as is         | N              | III        |
|        |           |                                            |              |          |       |              |                          |                |            |                   |                     |                     |              |                     |                |          |               |               |                |            |
| K      | 8"        | Chilled wtr to Drywell coolers Loop A      | No           | 29       | Water | Mo-2201A     | RM                       | Outside        | GT         | AC Motor          | Manual              | 42                  | 3            | D                   | O              | O        | C             | as is         | N              | III        |
|        |           |                                            |              |          |       |              |                          |                |            |                   |                     |                     |              |                     |                |          |               |               |                |            |
| L      | 3/4"      | Main stm. line "D" sample                  | No           | 24       | Steam | AO-2316      | I(A,B,C,D,E)             | Inside         | DCV        | Inst Gas          | Spring              | 5                   | A            | D                   | C              | C        | C             | C             | C              | I          |
|        |           |                                            |              |          |       | AO-2-317     | I(A,B,C,D,E)             | Outside        | DCV        | Inst Air          | Spring              | 5                   | B            | D                   | C              | C        | C             | C             | C              |            |

POOR ORIGINAL

Page 7

| Penetration Number     | Line Size | Line Description                                                                 | ESP (Yes/No)                        | Fig. No. | Fluid         | Valve Number                                                                                   | Isolation Group (Signal)                  | Valve Location                                                            | Valve Type                       | Mode of Actuation                                              |                                           | Closure Time (Sec.)            | Power Source                         | Position Indication        | Valve Position             |                            |                            |                                        | Leak Test Type             | Pipe Class                 |                              |
|------------------------|-----------|----------------------------------------------------------------------------------|-------------------------------------|----------|---------------|------------------------------------------------------------------------------------------------|-------------------------------------------|---------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------------|-------------------------------------------|--------------------------------|--------------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------------------|----------------------------|----------------------------|------------------------------|
|                        |           |                                                                                  |                                     |          |               |                                                                                                |                                           |                                                                           |                                  | Primary Actuation                                              | Secondary Actuation                       |                                |                                      |                            | Normal                     | Shutdown                   | Post-Accident              | Power Failure                          |                            |                            |                              |
| N-102                  | 1"        | Inst. Line - Unit 2 Drywell Press                                                | Yes                                 | 19       | Air           | 53B,D<br>60B,D                                                                                 |                                           | Outside<br>Outside                                                        | GB<br>GB                         |                                                                |                                           |                                |                                      |                            |                            |                            |                            |                                        | A<br>A                     | I                          |                              |
| N-203                  | 1"        | CACS & CAD Sample Line - CACS<br>- CACS<br>- CAD<br>- Rad Gas<br>- Inst<br>- CAD | No<br>No<br>Yes<br>No<br>Yes<br>Yes | 27       | Air           | SV-2671B<br>SV-2978B<br>SV-4960D<br>SV-4966D<br>-<br>SV-4961D                                  | III<br>III<br>RM<br>RM<br><br>RM          | Outside<br>Outside<br>Outside<br>Outside<br>Outside<br>Outside            | SV<br>SV<br>SV<br>SV<br>GB<br>SV | AC Coil<br>DC Coil<br>AC Coil<br>AC Coil<br>-<br>AC Coil       | Spring<br>"<br>"<br>"<br>-<br>Spring      | -<br>-<br>-<br>-<br>-<br>-     | A<br>B<br>D<br>3<br><br>D            | I<br>I<br>N<br>N<br><br>N  | O<br>O<br>C<br>C<br><br>C  | O<br>O<br>C<br>C<br><br>C  | C<br>C<br>O<br>C<br><br>O  | C<br>C<br>C<br>C<br><br>C              | C<br>C<br>C<br>C<br><br>C  | II                         |                              |
| N-205A                 | 20"       | Torus Vacuum Breaker                                                             | Yes                                 | 30       | Air           | AO-2502B<br>9-26B<br>-                                                                         | RM<br>-<br>-                              | Outside<br>Outside<br>Outside                                             | B<br>VB<br>GB                    | Inst. Air<br>Flow<br>-                                         | Spring<br>-<br>-                          | 5<br>-<br>-                    | 3<br>-<br>-                          | D<br>-<br>-                | C<br>C<br>C                | C<br>C<br>C                | C<br>C<br>C                | O<br>O<br>C                            | C<br>O<br>C                | C<br>C<br>C                | II                           |
| N-206A,B               | 2"        | Inst Lines - Torus Level                                                         | Yes                                 | 15       | Air/<br>water | -                                                                                              |                                           | Outside                                                                   | GB                               |                                                                |                                           |                                |                                      |                            |                            |                            |                            |                                        | A                          | I                          |                              |
| N-210A,<br>B           | 18"       | RHR Test & Pool cooling return                                                   | Yes                                 | 31       | Water         | MO-10-34<br>A,B<br>10-19A,B,C,<br>D                                                            | VII<br>-<br>-                             | Outside<br>Outside                                                        | GB<br>CK                         | AC Motor<br>Flow                                               | Manual<br>-                               | 24<br>-                        | C,D<br>-                             | D<br>-                     | C<br>C                     | C<br>O                     | C<br>O                     | C<br>-                                 | as is<br>N                 | C<br>N                     | II                           |
| N-211A,<br>B           | 6"        | RHR Torus Spray<br>-RHR<br>-RHR<br>-RHR<br>-CAD<br>-CAD<br>-CAD                  | Yes                                 | 31       | Water         | MO-10-38<br>A,B<br>MO-10-39<br>A,B<br>MO-10-34<br>A,B<br>SV-4950<br>A,B<br>SV-4951<br>A,B<br>- | VII<br>VII<br>VII<br>VII<br>RM<br>RM<br>- | Outside<br>Outside<br>Outside<br>Outside<br>Outside<br>Outside<br>Outside | GB<br>GT<br>GB<br>SV<br>SV<br>CK | AC Motor<br>AC Motor<br>AC Motor<br>AC Coil<br>AC Coil<br>Flow | Manual<br>Manual<br>Manual<br>-<br>-<br>- | 30<br>112<br>24<br>-<br>-<br>- | C,D<br>C,D<br>C,D<br>C,D<br>C,D<br>- | D<br>D<br>D<br>N<br>N<br>- | C<br>C<br>C<br>C<br>C<br>C | C<br>C<br>C<br>C<br>C<br>C | C<br>C<br>C<br>O<br>O<br>O | as is<br>as is<br>as is<br>C<br>C<br>- | C<br>C<br>C<br>C<br>C<br>N | C<br>C<br>C<br>C<br>C<br>C | II<br><br><br><br>I<br><br>I |
| N-212,<br>R14,<br>R17B | 12"       | HPCI & RCIC<br>Turbine Exhaust<br>-RCIC<br>-RCIC<br>-RCIC<br>-RCIC               | No<br>No<br>No<br>No                | 33       | Steam         | 13-9<br>13-50<br>RO-4240<br>AO-4241                                                            | -<br>-<br>TT<br>TT                        | Outside<br>Outside<br>Outside<br>Outside                                  | SCK<br>CK<br>DCV<br>DCV          | Flow<br>Flow<br>Inst Air<br>Inst Air                           | -<br>-<br>Spring<br>Spring                | -<br>-<br>5<br>5               | -<br>-<br>6<br>6                     | -<br>-<br>D<br>D           | O<br>O<br>O<br>O           | O<br>O<br>O<br>O           | O<br>O<br>O<br>O           | -<br>-<br>C<br>C                       | N<br>C<br>C<br>C           | II                         |                              |
|                        | 24"       | -HPCI<br>-HPCI<br>-HPCI                                                          | Yes<br>Yes<br>Yes                   |          | Steam         | 23-12<br>23-65<br>AO-4247                                                                      | -<br>-<br>TT                              | Outside<br>Outside<br>Outside                                             | SCK<br>CK<br>DCV                 | Flow<br>Flow<br>Inst air                                       | -<br>-<br>Spring                          | -<br>-<br>5                    | -<br>-<br>6                          | -<br>-<br>D                | O<br>O<br>O                | O<br>O<br>O                | O<br>O<br>O                | -<br>-<br>C                            | N<br>C<br>C                |                            |                              |

## PRIMARY CONTAINMENT ISOLATION SYSTEM DATA

Page 8

| Penetration Number | Line Size | Line Description              | ESF (Yes/No) | Fig. No. | Fluid | Valve Number | Isolation Group (Signal) | Valve Location | Valve Type | Mode of Actuation |                     | Closure Time (Sec.) | Power Source | Position Indication | Valve Position |          |               |               | Leak Test Type | Pipe Class |     |
|--------------------|-----------|-------------------------------|--------------|----------|-------|--------------|--------------------------|----------------|------------|-------------------|---------------------|---------------------|--------------|---------------------|----------------|----------|---------------|---------------|----------------|------------|-----|
|                    |           |                               |              |          |       |              |                          |                |            | Primary Actuation | Secondary Actuation |                     |              |                     | Normal         | Shutdown | Post-Accident | Power Failure |                |            |     |
| N-213A             | 2"        | -HPCI                         | Yes          |          | Air   | AO-4248      | TT                       | Outside        | DCV        | Inst Aid          | Spring              | 5                   | 6            | D                   | 0              | 0        | 0             | C             | C              |            |     |
|                    |           | -Vac relief                   | No           |          |       | MO-4244      | IV(C,D,E)                | Outside        | GT         | DC Motor          | Manual              | 15                  | E            | D                   | 0              | 0        | C             | as is         | C              |            |     |
|                    |           | -Vac relief                   | Yes          |          |       | MO-4244A     | IV(C,D,E)                | Outside        | GT         | DC Motor          | Manual              | 15                  | F            | D                   | 0              | 0        | C             | as is         | C              |            |     |
| N-213A             | 1"        | Torus Drain (with level inst) | -            | 15       | Water | -            | -                        | Outside        | GB         |                   |                     |                     |              |                     |                |          |               |               |                | A          | I   |
| N-215              | 1"        | Inst Line -Unit 2 Torus level | -            | 15       | Air   | -            | -                        | Outside        | GB         |                   |                     |                     |              |                     |                |          |               |               |                | A          | I   |
| N-216              | 4"        | HPCI Min. Flow                | Yes          | 32       | Water | 23-62        | -                        | Outside        | CK         | Flow              | -                   | -                   | -            | -                   | C              | C        | C             | -             | N              |            | II  |
| N-218A             | 1"        | Inst. Gas Supply              | No           | 10       | Air   | -            | -                        | Outside        | CK         | Flow              | -                   | -                   | -            | -                   | 0              | 0        | C             | -             | C              |            | III |
|                    |           |                               |              |          |       | AO-2468      | II(A,B)                  | Outside        | DCV        | Inst Air          | Spring              | 5                   | B            | D                   | 0              | 0        | C             | C             | C              |            |     |
| N-218B             | 1"        | CACS Sample Line              | No           | 26       | Air   | SV-2671A     | III                      | Outside        | SV         | AC Coil           | -                   | -                   | A            | I                   | 0              | 0        | C             | C             | C              |            | II  |
|                    |           |                               |              |          |       | SV-2978A     | III                      | Outside        | SV         | DC Coil           | -                   | -                   | B            | I                   | 0              | 0        | C             | C             | C              |            |     |
| N-218C             | 3/4"      | ILRT Connection               | No           | 18       | Air   | -            | LC                       | Outside        | GBC        | Manual            | -                   | -                   | -            | -                   | C              | C        | C             | -             | C              |            | III |
| N-219              | 18"       | Torus Purge Exhaust           | -            |          |       |              |                          |                |            |                   |                     |                     |              |                     |                |          |               |               |                |            |     |
|                    |           | -CACS                         | No           | 34       | Air   | AO-2511      | III                      | Outside        | B          | Int Air           | Spring              | 5                   | A            | D                   | C              | 0        | C             | C             | C              |            | II  |
|                    |           | -CACS                         | No           |          |       | AO-2512      | III                      | Outside        | B          | Int Air           | Spring              | 5                   | B            | D                   | C              | 0        | C             | C             | C              |            |     |
|                    |           | -CAD                          | Yes          |          |       | AO-2513      | III                      | Outside        | DCV        | Int Air           | Spring              | 5                   | A            | D                   | C              | C        | 0             | C             | C              |            |     |
|                    |           | -CAD                          | Yes          |          |       | AO-2514      | III                      | Outside        | DCV        | Int Air           | Spring              | 5                   | B            | D                   | C              | C        | 0             | C             | C              |            |     |
|                    |           | -CACS anal                    | No           |          |       | SV-2671P     | III                      | Outside        | SV         | AC Coil           | -                   | -                   | A            | I                   | 0              | 0        | C             | C             | C              |            |     |
|                    |           | -CACS ANAL                    | No           |          |       | SV-2978P     | III                      | Outside        | SV         | DC Coil           | -                   | -                   | B            | I                   | 0              | 0        | C             | C             | C              |            |     |
|                    |           | -CAD anal                     | Yes          |          |       | SV-4960A     | RM                       | Outside        | SV         | AC Coil           | -                   | -                   | C            | N                   | C              | C        | 0             | C             | C              |            |     |
|                    |           | -CAD anal                     | Yes          |          |       | SV-4961A     | RM                       | Outside        | SV         | AC Coil           | -                   | -                   | C            | N                   | C              | C        | 0             | C             | C              |            |     |
|                    |           | -Rad Gas                      | No           |          |       | SV-4966A     | RM                       | Outside        | SV         | AC Coil           | -                   | -                   | 3            | N                   | C              | C        | C             | C             | C              |            |     |
| N-221              | 2"        | RCIC Vacuum Pump Disch        | No           | 35       | Air   | 13-10        | -                        | Outside        | SCK        | Flow              | -                   | -                   | -            | -                   | 0              | 0        | 0             | -             | N              |            | II  |
|                    |           |                               |              |          |       | 13-38        | -                        | Outside        | CK         | Flow              | -                   | -                   | -            | -                   | C              | C        | 0             | -             | C              |            |     |
| N-223              | 2"        | HPCI Turbine Drain            | Yes          | 35       | Water | 23-13        | -                        | Outside        | SCK        | Flow              | -                   | -                   | -            | -                   | 0              | 0        | 0             | -             | N              |            | II  |
|                    |           |                               |              |          |       | 23-56        | -                        | Outside        | CK         | Flow              | -                   | -                   | -            | -                   | C              | C        | 0             | -             | C              |            |     |
| N-224              | 10"       | Core Spray test Line-Unit 2   | Yes          | 36       | Water | MO-14-26A    | VI                       | Outside        | GE         | AC Motor          | Manual              | 1                   | C            | C                   | C              | C        | C             | as is         | N              |            | II  |

## PRIMARY CONTAINMENT ISOLATION SYSTEM DATA

Page 9

| Penetration Number | Line Size | Line Description                   | ESP (Yes/No) | Fig. No. | Fluid | Valve Number | Isolation Group (Signal) | Valve Location | Valve Type | Mode of Actuation |                     | Closure Time (Sec.) | Power Source | Position Indication | Valve Position |          |               |               | Leak Test Type | Pipe Class |
|--------------------|-----------|------------------------------------|--------------|----------|-------|--------------|--------------------------|----------------|------------|-------------------|---------------------|---------------------|--------------|---------------------|----------------|----------|---------------|---------------|----------------|------------|
|                    |           |                                    |              |          |       |              |                          |                |            | Primary Actuation | Secondary Actuation |                     |              |                     | Normal         | Shutdown | Post-Accident | Power Failure |                |            |
| N-225              | 6"        | RCIC & Torus Water Cleanup Suct.   | No           | 37       | Water | -            | -                        | Outside        | CKC        | Flow              | -                   | -                   | -            | -                   | C              | C        | C             | -             | N              | II         |
|                    |           |                                    | Yes          |          |       | 14-66A,C     |                          |                | CKC        | Flow              | -                   | -                   | -            | -                   | C              | C        | C             | -             | N              |            |
|                    |           |                                    | No           |          |       | MO-13-41     |                          |                | GT         | DC Motor          | Manual              | 33                  | E            | D                   | C              | C        | O             | as is         | C              |            |
|                    |           |                                    | No           |          |       | MO-14-70     |                          |                | GT         | AC Motor          | Manual              | 20                  | E            | D                   | C              | C        | C             | as is         | C              |            |
| N-226A to D        | 24"       | BHR Pump Suction                   | Yes          | 38       | Water | MO-14-71     | II(A,B)                  | Outside        | GT         | D C Motor         | Manual              | 20                  | A            | D                   | C              | C        | C             | as is         | C              | II         |
|                    |           |                                    |              |          |       | MO-10-13     |                          |                | GT         | AC Motor          | Manual              | 30                  | A,B,C,D      | D                   | O              | O        | O             | as is         | N              |            |
|                    |           |                                    |              |          |       | A to D       |                          |                | RV         | Flow              | -                   | -                   | -            | -                   | C              | C        | C             | -             | N              |            |
| N-227              | 16"       | HPCI Pump Suction                  | Yes          | 39       | Water | RV-10-72     | -                        | Outside        | RV         | Flow              | -                   | -                   | -            | -                   | C              | C        | C             | -             | N              | II         |
|                    |           |                                    |              |          |       | A to D       |                          |                | GT         | DC Motor          | Manual              | 5                   | F            | D                   | C              | C        | O             | as is         | C              |            |
| N-228              | 16"       | Core Spray Pump suction            | Yes          | 40       | Water | MO-23-58     | IV(A,B,C)                | Outside        | GT         | AC Motor          | Manual              | 80                  | A,B,C,D      | D                   | O              | O        | O             | as is         | N              | II         |
| N-229              | 4"        | Core spray pump Min Flow - Unit 2  | Yes          | 41       | Water | Mo-14-7      | RM                       | Outside        | GT         | AC Motor          | Manual              | -                   | -            | -                   | O              | O        | O             | -             | N              | II         |
|                    |           |                                    |              |          |       | 14-66B,D     |                          |                | CK         | Flow              | -                   | -                   | -            | -                   | C              | C        | C             | -             | N              |            |
| N-230              | 2"        | RCIC Pump Min flow                 | No           | 42       | Water | -            | -                        | Outside        | CK         | Flow              | -                   | -                   | -            | -                   | C              | C        | C             | -             | N              | II         |
| N-233              | 4"        | HPCI Test Line - Unit 2            | Yes          | 43       | Water | 13-29        | -                        | Outside        | CK         | Flow              | -                   | -                   | -            | -                   | C              | C        | C             | -             | N              | II         |
| N-234              | 10"       | Core spray, etc Line - Unit 2      | Yes          | 44       | Water | MO-23-31     | V(D,F)                   | Outside        | GT         | DC Motor          | Manual              | 15                  | F            | D                   | C              | C        | C             | as is         | C              | II         |
| N-234A             | 10"       | Core Spray test Line - Unit 3      | Yes          | 44       | Water | MO-14-26B    | VI                       | Outside        | GB         | AC Motor          | Manual              | 14                  | D            | D                   | C              | C        | C             | as is         | N              | II         |
|                    |           |                                    |              |          |       | -            |                          |                | CK         | Flow              | -                   | -                   | -            | -                   | C              | C        | C             | -             | N              |            |
| N-234B             | 10"       | Core Spray test Line - Unit 3      | Yes          | 44       | Water | MO-14-26B    | VI                       | Outside        | CB         | AC Motor          | Manual              | 14                  | D            | D                   | C              | C        | C             | as is         | N              | II         |
| N-235              | 4"        | HPCI Test Line Unit 3              | Yes          | 43       | Water | MO-14-26A    | VI                       | Outside        | GB         | AC Motor          | Manual              | 14                  | C            | D                   | C              | C        | C             | as is         | N              | II         |
| N-236A             | 4"        | Core Spray Pump Min. Flow - Unit 3 | Yes          | 45       | Water | -            | -                        | Outside        | CK(2)      | Flow              | -                   | -                   | -            | -                   | C              | C        | C             | -             | N              | II         |
| N-236B             | 4"        | Core Spray Pump Min Flow - Unit 3  | Yes          | 41       | Water | MO-23-31     | V(DF)                    | Outside        | GT         | DC Motor          | Manual              | 15                  | F            | D                   | C              | C        | C             | as is         | C              | II         |
|                    |           |                                    |              |          |       | 14-66B,D     |                          |                | CK         | Flow              | -                   | -                   | -            | -                   | O              | O        | O             | -             | N              |            |
| N-236B             | 4"        | Core Spray Pump Min Flow - Unit 3  | No           | 41       | Water | 14-66-A,C    | -                        | Outside        | CK         | Flow              | -                   | -                   | -            | -                   | O              | O        | O             | -             | N              | II         |
|                    |           |                                    |              |          |       | =            |                          |                | CK         | Flow              | -                   | -                   | -            | -                   | C              | C        | C             | -             | N              |            |

PRIMARY CONTAINMENT ISOLATION SYSTEM DATA

Page 10

|                    |       |           |    |                  |                                  |              |    |          |    |       |     |              |   |                          |   |                |         |            |    |                   |                   |                     |                     |    |              |   |                     |   |                |        |          |               |               |                |   |   |            |   |   |
|--------------------|-------|-----------|----|------------------|----------------------------------|--------------|----|----------|----|-------|-----|--------------|---|--------------------------|---|----------------|---------|------------|----|-------------------|-------------------|---------------------|---------------------|----|--------------|---|---------------------|---|----------------|--------|----------|---------------|---------------|----------------|---|---|------------|---|---|
| Penetration Number | N-250 | Line Size | 1" | Line Description | Inst. Line - Unit 3, Torus Level | ESP (Yes/No) | No | Fig. No. | 15 | Fluid | Air | Valve Number | 1 | Isolation Group (Signal) | 3 | Valve Location | Outside | Valve Type | GB | Mode of Actuation | Primary Actuation | Secondary Actuation | Closure Time (Sec.) | 10 | Power Source | 5 | Position Indication | 6 | Valve Position | Normal | Shutdown | Post-Accident | Power Failure | Leak Test Type | 7 | A | Pipe Class | 8 | I |
|--------------------|-------|-----------|----|------------------|----------------------------------|--------------|----|----------|----|-------|-----|--------------|---|--------------------------|---|----------------|---------|------------|----|-------------------|-------------------|---------------------|---------------------|----|--------------|---|---------------------|---|----------------|--------|----------|---------------|---------------|----------------|---|---|------------|---|---|