

*If you are using a printed copy of this procedure, and not the on-screen version, then you **MUST** make sure the dates at the bottom of the printed copy and the on-screen version match. The on-screen version of the Collider-Accelerator Department Procedure is the Official Version. Hard copies of all signed, official, C-A Operating Procedures are available by contacting the **ESSHQ Procedures Coordinator, Bldg. 911A***

C-A OPERATIONS PROCEDURES MANUAL

4.120.81.b Tandem Gate Tests

Attachment

| C-A-OPM Procedures in which this Attachment is used. |  |  |
|--|--|--|
| 4.120.81   |  |  |
|  |  |  |
|  |  |  |

Hand Processed Changes

| <u>HPC No.</u> | <u>Date</u> | <u>Page Nos.</u> | <u>Initials</u> |
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Approved: \_\_\_\_\_ *Signature on File* \_\_\_\_\_  
 Collider-Accelerator Department Chairman Date

V. Castillo

**PASS SEMI-ANNUAL ACCEPTANCE TEST PROTOCOL**

Division A Software Filename and Checksum: Title: \_\_\_\_\_ Checksum: \_\_\_\_\_

Division B Software Filename and Checksum: Title: \_\_\_\_\_ Checksum: \_\_\_\_\_

**Initial testing complete:**

Test Team Leader's Name (Print): \_\_\_\_\_ Life Number: \_\_\_\_\_

Test Team Leader's Name (Sign): \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

**Acceptance test procedure complete (following repairs and retesting if required):**

Test Team Leader's Name (Print): \_\_\_\_\_ Life Number: \_\_\_\_\_

Test Team Leader's Name (Sign): \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

**Test results reviewed by:**

Safety Section Head's Name (Print): \_\_\_\_\_ Life Number: \_\_\_\_\_

Safety Section Head's Name (Sign): \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

**Test results accepted by Radiation Safety Committee:**

RSC Member's Name (Print): \_\_\_\_\_ Life Number: \_\_\_\_\_

RSC Member's Name (Sign): \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

1.1 CONDUCT Visual check on **Tandem** gates following Table-1, below

| <u>Gate</u>  | <u>Micro Switch</u> |              | <u>Elec Wiring</u> | <u>Gate Box</u> | <u>Lights</u> | <u>Gate Functions</u> |                     |              | Verify all x's Corr.     | Inspn O.K. <u>Init.</u> |
|--------------|---------------------|--------------|--------------------|-----------------|---------------|-----------------------|---------------------|--------------|--------------------------|-------------------------|
|              | <u>Align</u>        | <u>Opern</u> |                    |                 |               | <u>Open</u>           | <u>Self-Closing</u> | <u>Latch</u> |                          |                         |
| <b>TTB</b>   |                     |              |                    |                 |               |                       | N/A                 | N/A          | <input type="checkbox"/> |                         |
| <b>TR4PG</b> |                     |              |                    |                 |               |                       |                     |              | <input type="checkbox"/> |                         |
| <b>TR4ES</b> |                     |              |                    |                 |               |                       |                     |              | <input type="checkbox"/> |                         |
| <b>TR2SH</b> |                     |              |                    |                 |               |                       | N/A                 | N/A          | <input type="checkbox"/> |                         |
| <b>EEPSG</b> |                     |              |                    |                 |               |                       | N/A                 | N/A          | <input type="checkbox"/> |                         |
| <b>TCRPL</b> |                     |              |                    |                 |               |                       | N/A                 | N/A          | <input type="checkbox"/> |                         |
| <b>TCRSH</b> |                     |              |                    |                 |               |                       | N/A                 | N/A          | <input type="checkbox"/> |                         |
| <b>MERES</b> |                     |              |                    |                 |               |                       | N/A                 | N/A          | <input type="checkbox"/> |                         |
| <b>MERSH</b> |                     |              |                    |                 |               |                       | N/A                 | N/A          | <input type="checkbox"/> |                         |

Legend: Tick = O.K. x = Problem N/A = Not Applicable

**Table 1: Summary of Physical Inspection of Tandem Gates**

1.2 Test of Tandem to Booster (TTB) Gate:

- VERIFY** TTB gate has been inspected
- OPEN** TTB gate
- CLOSE** Div A and Div B **Micro Switch (MS)**
- VERIFY** At TTB gate box **Door Closed** light **ON**
- VERIFY** Tandem Control Room (TCR) sees TTB gate **CLOSED**
- OPEN** Div A MS
- VERIFY** At TTB gate box **Door Closed** light **OFF**
- CLOSE** Div A MS
- VERIFY** At TTB gate box **Door Closed** light **ON**
- OPEN** Div B MS
- VERIFY** At TTB gate box **Door Closed** light **OFF**
- VERIFY** TCR sees TTB gate **OPEN**
- CLOSE** Div B MS
- VERIFY** At TTB gate box **Door Closed** light **OFF**
- VERIFY** TCR sees TTB gate **CLOSED**
- CLOSE** Div A and Div B MS
- VERIFY** At TTB gate box **Door Closed** light is **ON**
- VERIFY** TCR sees TTB gate **CLOSED**
- CLOSE** TTB gate
- VERIFY** TCR sees TTB gate **CLOSED**
- VERIFY** At TTB gate box **Gate Reset** light is **OFF**
- VERIFY** TCR sees TTB gate Div A  and Div B  **NOT RESET**
- RESET** TTB gate at TTB gate box with **Key # MS11**
- VERIFY** At TTB gate box **Gate Reset** light is **ON**
- VERIFY** TCR sees TTB gate Div A  and Div B  **RESET**

- OPEN** TTB gate and hold open
- VERIFY** At **TTB** gate box **Gate Reset** light is **OFF**
  - VERIFY** TCR sees TTB gate **OPEN**
  - VERIFY** TCR sees TTB gate Div A  and Div B  **NOT RESET**
- CLOSE** **TTB gate**
- VERIFY** TCR sees TTB gate **CLOSED**
- Check for acceptance of Test of Tandem to Booster (TTB) Gate.**

**1.3 Test of Target Room 4 Passageway Door (TR4PG) Door:**

- VERIFY** **TR4PG** gate has been inspected
  - OPEN** **TR4PG** gate
- CLOSE** **Div A and Div B MSs**
- VERIFY** At **TR4PG** gate box **Door Closed** light **ON**
  - VERIFY** Tandem Control Room (TCR) sees TR4PG gate **CLOSED**
  - OPEN** Div A MS
  - VERIFY** At **TR4PG** gate box **Door Closed** light **OFF**
  - VERIFY** TCR sees TR4PG gate **OPEN**
- CLOSE** **Div A MS**
- VERIFY** At **TR4PG** gate box **Door Closed** light **ON**
  - VERIFY** TCR sees TR4PG gate **CLOSED**
  - OPEN** Div B MS
  - VERIFY** At **TR4PG** gate box **Door Closed** light **OFF**
  - VERIFY** TCR sees TR4PG gate **OPEN**
- CLOSE** **Div A and Div B MS**
- VERIFY** At **TR4PG** gate box **Door Closed** light is **ON**
  - VERIFY** TCR sees TR4PG gate **CLOSED**
- CLOSE** **TR4PG gate**
- VERIFY** TCR sees TR4PG gate **CLOSED**
  - VERIFY** At **TR4PG** gate box **Gate Reset** light is **OFF**
  - VERIFY** TCR sees TR4PG gate Div A  and Div B  **NOT RESET**
- RESET** **TR4PG gate at TR4PG gate box with Key # MS11**
- VERIFY** At **TR4PG** gate box **Gate Reset** light is **ON**
  - VERIFY** TCR sees TR4PG gate Div A  and Div B  **RESET**
- OPEN** TR4PG gate and hold open
- VERIFY** At **TR4PG** gate box **Gate Reset** light is **OFF**
  - VERIFY** TCR sees TR4PG gate **OPEN**
  - VERIFY** TCR sees TR4PG gate Div A  and Div B  **NOT RESET**
- CLOSE** **TR4PG gate**
- VERIFY** TCR sees TR4PG gate **CLOSED**
- Check for acceptance of Test of Target Room 4 Passageway (TR4PG) Door.**

1.4

**Test of TR4 Entry and Shield (TR4ES) Doors:**

- VERIFY** TR4ES doors have been inspected
  - OPEN** TR4 Shield door and **Hold open**
  - OPEN** TR4 Entry door and **Test MSs**
  - CLOSE** Div A and Div B MSs
  - VERIFY** At TR4ES gate box **Entry Door Closed** light **ON**
  - VERIFY** Tandem Control Room (TCR) sees TR4 Doors **OPEN**
  - OPEN** Div A MS
  - VERIFY** At TR4ES gate box **Entry Door Closed** light **OFF**
  - VERIFY** TCR sees TR4 Doors **OPEN**
  - CLOSE** Div A MS
  - VERIFY** At TR4ES gate box **Entry Door Closed** light **ON**
  - VERIFY** TCR sees TR4 Doors **OPEN**
  - OPEN** Div B MS
  - VERIFY** At TR4ES gate box **Entry Door Closed** light **OFF**
  - VERIFY** TCR sees TR4 Doors **OPEN**
  - CLOSE** Div A and Div B MS of Entry Door
  - VERIFY** At TR4ES gate box **Entry Door Closed** light is **ON**
  - VERIFY** TCR sees TR4 Doors **OPEN**
  - OPEN** TR4 Shield door and **Test MSs**
  - CLOSE** Div A and Div B MSs
  - VERIFY** At TR4ES gate box **Shield Door Closed** light **ON**
  - VERIFY** TCR sees TR4 Doors **CLOSED**
  - OPEN** Div A MS
  - VERIFY** At TR4ES gate box **Shield Door Closed** light **OFF**
  - VERIFY** TCR sees TR4 Doors **OPEN**
  - CLOSE** Div A MS
  - VERIFY** At TR4ES gate box **Shield Door Closed** light **ON**
  - VERIFY** TCR sees TR4 Doors **CLOSED**
  - OPEN** Div B MS
  - VERIFY** At TR4ES gate box **Shield Door Closed** light **OFF**
  - VERIFY** TCR sees TR4 Doors **OPEN**
  - CLOSE** Div A and Div B MS
  - VERIFY** At TR4ES gate box **Shield Door Closed** light is **ON**
  - VERIFY** TCR sees TR4 Doors **CLOSED**
  - CLOSE** TR4 Shield door
  - CLOSE** TR4 Entry Door
  - VERIFY** At TR4ES gate box **Entry Door Closed** light is **ON**
  - VERIFY** TCR sees TR4 Doors **CLOSED**
  - VERIFY** At TR4ES gate box **Gate Reset** light is **OFF**
  - VERIFY** TCR sees TR4 Doors Div A  and Div B  **NOT RESET**
  - RESET** TR4ES gate at TR4ES gate box with **Key # MS11**
  - VERIFY** At TR4ES gate box **Gate Reset** light is **ON**
  - VERIFY** TCR sees TR4 Doors Div A  and Div B  **RESET**

- |                          |               |   |                         |
|--------------------------|---------------|---|-------------------------|
|                          | <b>OPEN</b>   | <u>TR4 Entry Door and hold open</u>   |                         |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees TR4 Doors</u>   | <b>OPEN</b>             |
| <input type="checkbox"/> | <b>VERIFY</b> | At TR4ES gate box <b>Gate Reset</b> light is  | <b>OFF</b>              |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees TR4 Doors Div A <input type="checkbox"/> and Div B <input type="checkbox"/></u> | <b><u>NOT RESET</u></b> |
|                          | <b>CLOSE</b>  | <b>TR4 Entry Door</b>   |                         |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees TR4 Doors</u>   | <b>CLOSED</b>           |
|                          | <b>RESET</b>  | TR4ES gate at TR4ES gate box with <b>Key # MS11</b>   |                         |
| <input type="checkbox"/> | <b>VERIFY</b> | At TR4ES gate box <b>Gate Reset</b> light is  | <b>ON</b>               |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees TR4 Doors Div A <input type="checkbox"/> and Div B <input type="checkbox"/></u> | <b><u>RESET</u></b>     |
|                          | <b>OPEN</b>   | <u>TR4 Shield Door and hold open</u>  |                         |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees TR4 Doors</u>   | <b>OPEN</b>             |
| <input type="checkbox"/> | <b>VERIFY</b> | At TR4ES gate box <b>Gate Reset</b> light is  | <b>OFF</b>              |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees TR4 Doors Div A <input type="checkbox"/> and Div B <input type="checkbox"/></u> | <b><u>NOT RESET</u></b> |
|                          | <b>CLOSE</b>  | <b>TR4 Shield Door</b>  |                         |
- Check for acceptance of Test of TR4 Entry and Shield (TR4ES) Doors.

**1.5 Test of Target Room 2 Shield (TR2SH) Door:**

- |                          |               |  |                         |
|--------------------------|---------------|--|-------------------------|
| <input type="checkbox"/> | <b>VERIFY</b> | TR2SH gate has been inspected  |                         |
|                          | <b>OPEN</b>   | TR2SH gate   |                         |
|                          | <b>CLOSE</b>  | Div A and Div B MSs  |                         |
| <input type="checkbox"/> | <b>VERIFY</b> | At TR2SH gate box <b>Door Closed</b> light   | <b>ON</b>               |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>Tandem Control Room (TCR) sees TR2SH gate</u>   | <b>CLOSED</b>           |
|                          | <b>OPEN</b>   | <u>Div A MS</u>  |                         |
| <input type="checkbox"/> | <b>VERIFY</b> | At TR2SH gate box <b>Door Closed</b> light   | <b>OFF</b>              |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees TR2SH gate</u>   | <b>OPEN</b>             |
|                          | <b>CLOSE</b>  | Div A MS   |                         |
| <input type="checkbox"/> | <b>VERIFY</b> | At TR2SH gate box <b>Door Closed</b> light   | <b>ON</b>               |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees TR2SH gate</u>   | <b>CLOSED</b>           |
|                          | <b>OPEN</b>   | <u>Div B MS</u>  |                         |
| <input type="checkbox"/> | <b>VERIFY</b> | At TR2SH gate box <b>Door Closed</b> light   | <b>OFF</b>              |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees TR2SH gate</u>   | <b>OPEN</b>             |
|                          | <b>CLOSE</b>  | Div A and Div B MS   |                         |
| <input type="checkbox"/> | <b>VERIFY</b> | At TR2SH gate box <b>Door Closed</b> light is  | <b>ON</b>               |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees TR2SH gate</u>   | <b>CLOSED</b>           |
|                          | <b>CLOSE</b>  | TR2SH gate   |                         |
| <input type="checkbox"/> | <b>VERIFY</b> | At TR2SH gate box <b>Door Closed</b> light is  | <b>ON</b>               |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees TR2SH gate</u>   | <b>CLOSED</b>           |
| <input type="checkbox"/> | <b>VERIFY</b> | At TR2SH gate box <b>Gate Reset</b> light is   | <b>ON</b>               |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees TR2SH gate Div A <input type="checkbox"/> and Div B <input type="checkbox"/></u> | <b><u>NOT RESET</u></b> |
|                          | <b>RESET</b>  | TR2SH gate at TR2SH gate box with <b>Key # MS11</b>  |                         |

- VERIFY** At **TR2SH** gate box **Gate Reset** light is **ON**
- VERIFY** TCR sees TR2SH gate Div A  and Div B  **RESET**
- OPEN** TR2SH gate and hold open
- VERIFY** At **TR2SH** gate box **Gate Reset** light is **OFF**
- VERIFY** TCR sees TR2SH gate **OPEN**
- VERIFY** TCR sees TR2SH gate Div A  and Div B  **NOT RESET**
- CLOSE** **TR2SH** gate

- Check for acceptance of Test of Target Room 2 Shield (TR2SH) Door.**

**1.6 Test of EE Passageway (EEPSG) Door:**

- VERIFY** **EEPSG** gate has been inspected
- OPEN** **EEPSG** gate
- CLOSE** Div A and Div B MSs
- VERIFY** At **EEPSG** gate box **Door Closed** light **ON**
- VERIFY** Tandem Control Room (TCR) sees EEPSG gate **CLOSED**
- OPEN** Div A MS
- VERIFY** At **EEPSG** gate box **Door Closed** light **OFF**
- VERIFY** TCR sees EEPSG gate **OPEN**
- CLOSE** Div A MS
- VERIFY** At **EEPSG** gate box **Door Closed** light **OFF**
- VERIFY** TCR sees EEPSG gate **CLOSED**
- OPEN** Div B MS
- VERIFY** At **EEPSG** gate box **Door Closed** light **OFF**
- VERIFY** TCR sees EEPSG gate **OPEN**
- CLOSE** Div A and Div B MS
- VERIFY** At **EEPSG** gate box **Door Closed** light is **ON**
- VERIFY** TCR sees EEPSG gate **CLOSED**
- CLOSE** **EEPSG** gate
- VERIFY** TCR sees EEPSG gate **CLOSED**
- VERIFY** At **EEPSG** gate box **Gate Reset** light is **OFF**
- VERIFY** TCR sees EEPSG gate Div A  and Div B  **NOT RESET**
- RESET** **EEPSG** gate at **EEPSG** gate box with **Key # MS11**
- VERIFY** At **EEPSG** gate box **Gate Reset** light is **ON**
- VERIFY** TCR sees EEPSG gate Div A  and Div B  **RESET**
- OPEN** EEPSG gate and hold open

- VERIFY** At **EEPSG** gate box **Gate Reset** light is **OFF**
- VERIFY** TCR sees **EEPSG** gate **OPEN**
- VERIFY** TCR sees **EEPSG** gate **Div A**  and **Div B**  **NOT RESET**
  
- CLOSE** **EEPSG** gate
- VERIFY** TCR sees **EEPSG** gate **CLOSED**
  
- Check for acceptance of Test of EE Passageway (EEPSG) Door.**

**1.7 Test of TCR Plenum (TCRPL) and TCR Shield (TCRSH) Doors:**

- VERIFY** TCR doors have been inspected
- OPEN** TCR SH door and **Hold open**
  
- OPEN** TCRPL door and **Test MSs**
- CLOSE** **Div A** and **Div B** MSs
- VERIFY** At TCR gate box **Plenum Door Closed** light **ON**
- VERIFY** TCR sees **CR** gate **OPEN**
- OPEN** Div A MS
- VERIFY** At TCR gate box **Plenum Door Closed** light **OFF**
- VERIFY** TCR sees **CR** gate **OPEN**
  
- CLOSE** **Div A MS**
- VERIFY** At TCR gate box **Plenum Door Closed** light **ON**
- VERIFY** TCR sees **CR** gate **OPEN**
- OPEN** Div B MS
- VERIFY** At TCR gate box **Plenum Door Closed** light **OFF**
- VERIFY** TCR sees **CR** gate **OPEN**
  
- CLOSE** **Div A** and **Div B** MS
  
- VERIFY** At TCR gate box **Plenum Door Closed** light is **ON**
- VERIFY** TCR sees **CR** gate **OPEN**
- CLOSE** TCRPL door
- VERIFY** TCR sees **CR** gate **OPEN**
- VERIFY** At TCR gate box **Plenum Door Closed** light is **ON**
  
- VERIFY** Attempt to reset TCR doors at TCR gate box with key # MS11 **FAIL**
  
- OPEN** TCR Shield door and **Test MSs**
- CLOSE** **Div A** and **Div B** MSs
- VERIFY** At TCR gate box **Shield Door Closed** light **ON**
- VERIFY** TCR sees **CR** gate **CLOSED**
- OPEN** Div A MS
- VERIFY** At TCR gate box **Shield Door Closed** light **OFF**
- VERIFY** TCR sees **CR** gate **OPEN**
- CLOSE** **Div A MS**
- VERIFY** At TCR gate box **Shield Door Closed** light **ON**
- VERIFY** TCR sees **CR** gate **CLOSED**
  
- OPEN** Div B MS
- VERIFY** At TCR gate box **Shield Door Closed** light **OFF**
- VERIFY** TCR sees **CR** gate **OPEN**

|                          |               |   |                  |
|--------------------------|---------------|---|------------------|
|                          | <b>CLOSE</b>  | Div A and Div B MSs   |                  |
| <input type="checkbox"/> | <b>VERIFY</b> | At TCR gate box <b>Shield Door Closed</b> light is  | <b>ON</b>        |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees CR gate</u>   | <b>CLOSED</b>    |
|                          | <b>CLOSE</b>  | TCR Shield door   |                  |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees CR gate</u>   | <b>CLOSED</b>    |
|                          | <b>RESET</b>  | TCR gate at TCR gate box with <b>Key # MS11</b>   |                  |
| <input type="checkbox"/> | <b>VERIFY</b> | At TCR gate box <b>Gate Reset</b> light is  | <b>ON</b>        |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees CR gate Div A <input type="checkbox"/> and Div B <input type="checkbox"/></u> | <b>RESET</b>     |
|                          | <b>OPEN</b>   | <u>TCRPL Door</u>   |                  |
| <input type="checkbox"/> | <b>VERIFY</b> | At TCR gate box <b>Plenum Door Closed</b> light is  | <b>OFF</b>       |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees CR gate</u>   | <b>OPEN</b>      |
| <input type="checkbox"/> | <b>VERIFY</b> | At TCR gate box <b>Gate Reset</b> light is  | <b>OFF</b>       |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees CR gate Div A <input type="checkbox"/> and Div B <input type="checkbox"/></u> | <b>NOT RESET</b> |
|                          | <b>CLOSE</b>  | TCRPL Door  |                  |
| <input type="checkbox"/> | <b>VERIFY</b> | At TCR gate box <b>Plenum Door Closed</b> light is  | <b>ON</b>        |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees CR gate</u>   | <b>CLOSED</b>    |
|                          | <b>RESET</b>  | TCR gate at TCR gate box with <b>Key # MS11</b>   |                  |
| <input type="checkbox"/> | <b>VERIFY</b> | At TCR gate box <b>Gate Reset</b> light is  | <b>ON</b>        |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees CR gate Div A <input type="checkbox"/> and Div B <input type="checkbox"/></u> | <b>RESET</b>     |
|                          | <b>OPEN</b>   | <u>TCRSH Door and hold open</u>   |                  |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees CR gate</u>   | <b>OPEN</b>      |
| <input type="checkbox"/> | <b>VERIFY</b> | At TCR gate box <b>Gate Reset</b> light is  | <b>OFF</b>       |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees CR gate Div A <input type="checkbox"/> and Div B <input type="checkbox"/></u> | <b>NOT RESET</b> |
|                          | <b>CLOSE</b>  | TCRSH Door  |                  |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees CR gate</u>   | <b>CLOSED</b>    |

Check for acceptance of Test of TCR Plenum (TCRPL) and TCR Shield (TCRSH) Doors.

**1.8 Test of MER Escape (MERES) and MER Shield (MERSH) Doors:**

- VERIFY** MER doors have been inspected
  - OPEN** MER Shield door and **keep open**
  - OPEN** MER Escape door and Test MSs
  - CLOSE** Div A and Div B MSs
  - VERIFY** At MER gate box **Escape Door Closed** light **ON**
  - VERIFY** TCR sees Mechanical Room (MR) gate **OPEN**
  - OPEN** Div A MS
  - VERIFY** At MER gate box **Escape Door Closed** light **OFF**
  - VERIFY** TCR sees MR gate **OPEN**
  - CLOSE** Div A MS
  - VERIFY** At MER gate box **Escape Door Closed** light **ON**
  - VERIFY** TCR sees MR gate **OPEN**
  - OPEN** Div B MS
  - VERIFY** At MER gate box **Escape Door Closed** light **OFF**
  - VERIFY** TCR sees MR gate **OPEN**
  - CLOSE** Div A and Div B MS
  - VERIFY** At MER gate box **Escape Door Closed** light is **ON**
  - VERIFY** TCR sees MR gate **OPEN**
  - CLOSE** MER Escape door
  - VERIFY** TCR sees MR gate **OPEN**
  - VERIFY** **Attempt to reset MER doors at MER gate box with Key # MS11** **FAIL**
  - VERIFY** At MER gate box **Gate Reset** light is **OFF**
  - VERIFY** TCR sees MR gate Div A  and Div B  **NOT RESET**
  - CLOSE** MER Escape Door
  - OPEN** MER Shield door and Test MSs
  - CLOSE** Div A and Div B MSs
  - VERIFY** At MER gate box **Shield Door Closed** light **ON**
  - VERIFY** TCR sees MR gate **CLOSED**
  - OPEN** Div A MS
  - VERIFY** At MER gate box **Shield Door Closed** light **OFF**
  - VERIFY** TCR sees MR gate **OPEN**
  - CLOSE** Div A MS
  - VERIFY** At MER gate box **Shield Door Closed** light **ON**
  - VERIFY** TCR sees MR gate **CLOSED**
  - OPEN** Div B MS
  - VERIFY** At MER gate box **Shield Door Closed** light **OFF**
  - VERIFY** TCR sees MR gate **OPEN**
  - CLOSE** Div A and Div B MS
  - VERIFY** At MER gate box **Shield Door Closed** light is **ON**
  - VERIFY** TCR sees MR gate **CLOSED**

- |                          |               |   |                         |
|--------------------------|---------------|---|-------------------------|
|                          | <b>CLOSE</b>  | <b>MER Shield door</b>  |                         |
|                          | <b>RESET</b>  | <b>MER gate at MER gate box with Key # MS11</b>   |                         |
| <input type="checkbox"/> | <b>VERIFY</b> | At MER gate box <b>Gate Reset</b> light is  | <b>ON</b>               |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees MR gate Div A <input type="checkbox"/> and Div B <input type="checkbox"/></u> | <u><b>RESET</b></u>     |
|                          | <b>OPEN</b>   | <u><b>MER Escape Door</b></u>   |                         |
| <input type="checkbox"/> | <b>VERIFY</b> | At MER gate box <b>Escape Door Closed</b> light is  | <b>OFF</b>              |
| <input type="checkbox"/> | <b>VERIFY</b> | At MER gate box <b>Shield Door Closed</b> light is  | <b>OFF</b>              |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees MR gate</u>   | <b>OPEN</b>             |
| <input type="checkbox"/> | <b>VERIFY</b> | At MER gate box <b>Gate Reset</b> light is  | <b>OFF</b>              |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees CR gate Div A <input type="checkbox"/> and Div B <input type="checkbox"/></u> | <u><b>NOT RESET</b></u> |
|                          | <b>CLOSE</b>  | <b>MER Escape Door</b>  |                         |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees MR gate</u>   | <b>CLOSED</b>           |
| <input type="checkbox"/> | <b>VERIFY</b> | At MER gate box <b>Gate Reset</b> light is  | <b>OFF</b>              |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees CR gate Div A <input type="checkbox"/> and Div B <input type="checkbox"/></u> | <u><b>NOT RESET</b></u> |
|                          | <b>RESET</b>  | <b>MER gate at MER gate box with Key # MS11</b>   |                         |
| <input type="checkbox"/> | <b>VERIFY</b> | At MER gate box <b>Gate Reset</b> light is  | <b>ON</b>               |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees MR gate Div A <input type="checkbox"/> and Div B <input type="checkbox"/></u> | <u><b>RESET</b></u>     |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees MR gate</u>   | <b>CLOSED</b>           |
|                          | <b>OPEN</b>   | <u><b>MER Shield Door and hold open</b></u>   |                         |
| <input type="checkbox"/> | <b>VERIFY</b> | At MER gate box <b>Gate Reset</b> light is  | <b>OFF</b>              |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees CR gate Div A <input type="checkbox"/> and Div B <input type="checkbox"/></u> | <u><b>NOT RESET</b></u> |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees MR gate</u>   | <b>OPEN</b>             |
|                          | <b>CLOSE</b>  | <b>MER Shield Door</b>  |                         |
| <input type="checkbox"/> | <b>VERIFY</b> | <u>TCR sees MR gate</u>   | <b>CLOSED</b>           |
| <input type="checkbox"/> |               | <b>Check for acceptance of Test of MER Escape (MERES) and MER Shield (MERSH) Doors.</b>   |                         |

**END OF TEST PROCEDURE**

**TTL: Sign for completion of initial testing:** \_\_\_\_\_

**Date:** \_\_\_\_/\_\_\_\_/\_\_\_\_

**TTL: Sign for completion of final testing:** \_\_\_\_\_

**Date:** \_\_\_\_/\_\_\_\_/\_\_\_\_