

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

4.120.102.b NASA Space Radiation Laboratory (NSRL)
(Peer 27) Gate Tests

Attachment

| C-A-OPM Procedures in which this Attachment is used. | | |
|------------------------------------------------------|--|--|
| 4.120.102 | | |
| | | |
| | | |

Hand Processed Changes

| <u>HPC No.</u> | <u>Date</u> | <u>Page Nos.</u> | <u>Initials</u> |
|----------------|-------------|------------------|-----------------|
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |

Approved: _____ *Signature on File* _____
 Collider-Accelerator Department Chairman Date

V. Castillo

4.120.102.b NASA Space Radiation Laboratory (NSRL), (PEER 27) GATE TESTS

PASS 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 Peer 27 gates following Table-1, below

| Gate | Micro Switch | | Elec Wiring | Gate Box | Lights | Gate Functions | | | Verify all x's Corr. | Inspn O.K. Init. |
|-------------|--------------|-------|-------------|----------|--------|----------------|--------------|-------|--------------------------|------------------|
| | Align | Opern | | | | Open | Self-Closing | Latch | | |
| BGE1 | | | | | | | | | <input type="checkbox"/> | |
| BGI1 | | | | | | | | | <input type="checkbox"/> | |
| BGI2 | | | | | | | | | <input type="checkbox"/> | |
| BGE2 | | | | | | | | | <input type="checkbox"/> | |

Legend: √ = O.K. X = Problem N/A = Not Applicable

Table 1: Summary of Physical Inspection of Peer 27 Gates

CHECK for test acceptance of Visual Check of Peer 27 gates

1.2 Test of ENTRY GATE at BGE1

- VERIFY PLACE** ENTRY Gate at **BGE1** has been inspected
- VERIFY** **PEER 27** in **Controlled Access (CA), Mode 16**
- VERIFY** **PEER 27** is in **CA** **MODE 16**
- VERIFY** The **Exterior** gate box **Controlled Access** light is **ON**
- OPEN** Gate **BGE1** with **Simultaneous Release (SR)** and **#20 CA Key**
- VERIFY** Simultaneous Release **Buzzer** **SOUNDS**
- VERIFY** Simultaneous Release **Light** **LIGHTS**
- VERIFY** Gate **BGE1** **automatically** **OPENS**
- VERIFY** **Hindrance** in **No Open Zone** causes Gate **BGE1** to **NOT OPEN**
- VERIFY** With **removal** of **hindrance** Gate **BGE1** **OPENS**
- VERIFY** Gate **BGE1** **automatically**
- VERIFY** Gate **BGE1** is **OPEN**
- VERIFY** MCR sees the gate is **OPEN**
- BLOCK** Gate **beam**
- VERIFY** **Blocking** Gate **beam** keeps gate **OPEN**
- CLEAR** Gate **beam**
- VERIFY** Gate **BGE1** **automatically** **CLOSES**
- VERIFY** MCR sees the gate is **CLOSED**
- RESET** The gate with **#21 Sweep/Reset (S/R)** key at the **exterior** gate box
- VERIFY** MCR sees the gate is **RESET**
- VERIFY** The **BGE1** gate box Gate **Reset** light is **ON**
- OPEN** The gate
- VERIFY** MCR sees the gate is **OPEN**
- VERIFY** The **BGE1** gate box Gate **Reset** light is **OFF**
- CLOSE** The gate
- RESET** Gate from **MCR**

| | | | |
|--------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| <input type="checkbox"/> | VERIFY | MCR sees the gate is | RESET |
| <input type="checkbox"/> | VERIFY | The BGE1 gate box Gate Reset light is | ON |
| | FORCE | Sweep of Zone NSRL-Z3 | |
| <input type="checkbox"/> | VERIFY | MCR sees Zone Z3 | SWEPT |
| | FORCE | Reset of Gates: BGI1, BGE2, BGI2 | |
| <input type="checkbox"/> | VERIFY | MCR sees Gates: BGI1 <input type="checkbox"/> , BGE2 <input type="checkbox"/> , and BGI2 <input type="checkbox"/> | RESET |
| | PLACE | PEER 27 in Controlled Access (XA), Mode 17 | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in CA CA NA | MODE 17 |
| <input type="checkbox"/> | VERIFY | Z1 Keytree | INCOMPLETE |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGE1 with #20 CA key and SR is | SUCCESSFUL |
| | CLOSE | Gate BGE1 | |
| | PLACE | PEER 27 in Restricted Access (XA), Mode 9 | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in RA RA NA | MODE 9 |
| <input type="checkbox"/> | VERIFY | Z1 Keytree | INCOMPLETE |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGE1 with #20 CA key | FAIL |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGE1 with S key is | SUCCESSFUL |
| | CLOSE | Gate BGE1 | |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGE1 with Blue Card is | SUCCESSFUL |
| | CLOSE | Gate BGE1 | |
| | PLACE | PEER 27 in CA, Mode 16 | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in CA | MODE 16 |
| | FORCE | Sweep of Zone NSRL-Z2 | |
| <input type="checkbox"/> | VERIFY | MCR sees Zones: Z2 <input type="checkbox"/> and Z3 <input type="checkbox"/> | SWEPT |
| <input type="checkbox"/> | VERIFY | MCR sees Gates: BGI1 <input type="checkbox"/> , BGE2 <input type="checkbox"/> , and BGI2 <input type="checkbox"/> | RESET |
| | PLACE | PEER 27 in Controlled Access (XA), Mode 18 | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in CA NA NA | MODE 18 |
| <input type="checkbox"/> | VERIFY | Z1 Keytree | INCOMPLETE |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGE1 with #20 CA key and SR is | SUCCESSFUL |
| | CLOSE | Gate BGE1 | |
| | PLACE | PEER 27 in Restricted Access (XA), Mode10 | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in RA NA NA | MODE 10 |
| <input type="checkbox"/> | VERIFY | Z1 Keytree | INCOMPLETE |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGE1 with #20 CA key | FAIL |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGE1 with S key is | SUCCESSFUL |
| | CLOSE | Gate BGE1 | |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGE1 with Blue Card is | SUCCESSFUL |
| | CLOSE | Gate BGE1 | |
| | PLACE | PEER 27 in CA, Mode 16 | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in CA | MODE 16 |
| | PLACE | PEER 27 in Restricted Access (Mode 8) | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in Restricted Access | MODE 8 |
| <input type="checkbox"/> | VERIFY | The Exterior gate box Restricted Access light is | ON |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGE1 with S key is | SUCCESSFUL |
| | CLOSE | Gate BGE1 | |

- VERIFY** Attempt to **open** gate **BGE1** with **#20 CA** key **FAIL**
- VERIFY** Attempt to **open** gate **BGE1** with **Blue Card** is **SUCCESSFUL**
- CLOSE** Gate **BGE1**
- PLACE** **PEER 27** in **Safe Access (Mode 2)**
- VERIFY** **PEER 27** is in **Safe Access** **MODE 2**
- VERIFY** The **Exterior** gate box **Safe Access** light is **ON**
- VERIFY** Attempt to **open** gate **BGE1** with **S** key and **SR** **FAIL**
- VERIFY** Attempt to **open** gate **BGE1** with **#20 CA** key and **SR** is **SUCCESSFUL**
- CLOSE** Gate **BGE1**
- CHECK** for test acceptance of **ENTRY GATE** at **BGE1**

1.3 Test of GATE at BGI1

- VERIFY** **ENTRY** Gate at **BGI1** has been inspected
- PLACE** **PEER 27** in **Controlled Access (CA), Mode 16**
- VERIFY** **PEER 27** is in **CA** **MODE 16**
- VERIFY** The gate box **Controlled Access** light is **ON**
- OPEN** Gate **BGI1** with **Simultaneous Release (SR)** and **#22 CA Key**
- VERIFY** Simultaneous Release **Buzzer** **SOUNDS**
- VERIFY** Simultaneous Release **Light** **LIGHTS**
- VERIFY** Gate **BGI1** is **OPEN**
- VERIFY** MCR sees the gate is **OPEN**
- SECURE** The Electric Strike micro switch **MADE**
- HOLD** Both of the gate micro switches **MADE**
- VERIFY** MCR sees the gate is **CLOSED**
- RELEASE** Div A micro switch
- VERIFY** MCR sees **DIV A ≠ DIV B**
- HOLD** Both of the gate micro switches **MADE**
- VERIFY** MCR sees the gate is **CLOSED**
- RELEASE** Div B micro switch
- VERIFY** MCR sees **DIV A ≠ DIV B**
- HOLD** Both of the gate micro switches **MADE**
- VERIFY** MCR sees the gate is **CLOSED**
- RELEASE** The Electric Strike micro switch
- VERIFY** MCR sees the gate is **OPEN**
- CLOSE** The gate
- VERIFY** MCR sees the gate is **CLOSED**
- RESET** The gate with **#23 S/R** key at the **NSRL-Z1** gate box
- VERIFY** MCR sees the gate is **RESET**
- VERIFY** The **BGI1** gate box Gate **Reset** light is **ON**
- OPEN** The gate
- VERIFY** MCR sees the gate is **OPEN**
- VERIFY** The **BGI1** gate box Gate **Reset** light is **OFF**
- CLOSE** The gate

| | | | |
|--------------------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| <input type="checkbox"/> | VERIFY | MCR sees the gate is | CLOSED |
| | RESET | The gate from MCR | |
| <input type="checkbox"/> | VERIFY | MCR sees the gate is | RESET |
| <input type="checkbox"/> | VERIFY | The BGI1 gate box Gate Reset light is | ON |
| | OPEN | The gate | |
| <input type="checkbox"/> | VERIFY | MCR sees the gate is | OPEN |
| <input type="checkbox"/> | VERIFY | The BGI1 gate box Gate Reset light is | OFF |
| | CLOSE | The gate | |
| | FORCE | Sweep in Zone NSRL-Z3 | |
| <input type="checkbox"/> | VERIFY | MCR sees Zone NSRL-Z3 | SWEPT |
| | RESET | Gates: BGI1, BGE2, BGI2 from MCR | |
| <input type="checkbox"/> | VERIFY | MCR sees Gates: BGI1 <input type="checkbox"/> , BGE2 <input type="checkbox"/> , and BGI2 <input type="checkbox"/> | RESET |
| | PLACE | PEER 27 in Controlled Access (XA), Mode 17 | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in CA CA NA | MODE 17 |
| <input type="checkbox"/> | VERIFY | Z2 Keytree | INCOMPLETE |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGI1 with #22 CA key and SR is | SUCCESSFUL |
| | CLOSE | Gate BGI1 | |
| | PLACE | PEER 27 in Restricted Access (RA), Mode 9 | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in RA RA NA | MODE 9 |
| <input type="checkbox"/> | VERIFY | Z2 Keytree | INCOMPLETE |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGI1 with #22 CA key | FAIL |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGI1 with S key is | SUCCESSFUL |
| | CLOSE | Gate BGI1 | |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGI1 with Blue Card is | SUCCESSFUL |
| | CLOSE | Gate BGI1 | |
| | PLACE | PEER 27 in CA, Mode 16 | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in CA | MODE 16 |
| | FORCE | Sweep of Zone NSRL-Z2 | |
| <input type="checkbox"/> | VERIFY | MCR sees Zones: Z2 <input type="checkbox"/> and Z3 <input type="checkbox"/> | SWEPT |
| <input type="checkbox"/> | VERIFY | MCR sees Gates: BGI1 <input type="checkbox"/> , BGE2 <input type="checkbox"/> , and BGI2 <input type="checkbox"/> | RESET |
| | PLACE | PEER 27 in Controlled Access (XA), Mode 18 | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in CA NA NA | MODE 18 |
| <input type="checkbox"/> | VERIFY | Z2 Keytree | COMPLETE |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGI1 with #22 CA key and SR | FAIL |
| <input type="checkbox"/> | VERIFY | PEER 27 goes to SA | MODE 2 |
| | PLACE | PEER 27 in Restricted Access (XA), Mode10 | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in RA NA NA | MODE 10 |
| <input type="checkbox"/> | VERIFY | Z2 Keytree | COMPLETE |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGI1 with S key | FAIL |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGI1 with Blue Card is | FAIL |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGI1 with #22 CA key and SR | FAIL |
| <input type="checkbox"/> | VERIFY | PEER 27 goes to SA | MODE 2 |
| | PLACE | PEER 27 in CA, Mode 16 | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in CA | MODE 16 |
| | PLACE | PEER 27 in Restricted Access (Mode 8) | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in Restricted Access | MODE 8 |
| <input type="checkbox"/> | VERIFY | The NSRL-Z2 gate box Restricted Access light is | ON |

- VERIFY** Attempt to **open** gate **BGI1** with **S** key is **SUCCESSFUL**
- CLOSE** Gate **BGI1**
- VERIFY** Attempt to **open** gate **BGI1** with **#22 CA** key is **FAIL**
- VERIFY** Attempt to **open** gate **BGI1** with **Blue Card** is **SUCCESSFUL**
- CLOSE** Gate **BGI1**
- PLACE** **PEER 27** in **Safe Access (Mode 2)**
- VERIFY** **PEER 27** is in **Safe Access** **MODE 2**
- VERIFY** The **NSRL-Z2** gate box **Safe Access** light is **ON**
- VERIFY** Attempt to **open** gate **BGI1** with **S** key and **SR** **FAIL**
- VERIFY** Attempt to **open** gate **BGI1** with **#22 CA** key and **SR** **SUCCESSFUL**
- CLOSE** Gate **BGI1**
- CHECK for acceptance of test of GATE BGI1**

1.4 Test of GATE at BGI2

- VERIFY** **ENTRY** Gate at **BGI2** has been inspected
- PLACE** **PEER 27** in **Controlled Access (CA), Mode 16**
- VERIFY** **PEER 27** is in **CA** **MODE 16**
- VERIFY** The gate box **Controlled Access** light is **ON**
- OPEN** Gate **BGI2** with **Simultaneous Release (SR)** and **#24 CA Key**
- VERIFY** Simultaneous Release **Buzzer** **SOUNDS**
- VERIFY** Simultaneous Release **Light** **LIGHTS**
- VERIFY** Gate **BGI2** is **OPEN**
- VERIFY** MCR sees the gate is **OPEN**
- SECURE** The Electric Strike micro switch **MADE**
- HOLD** Both of the gate micro switches **MADE**
- VERIFY** MCR sees the gate is **CLOSED**
- RELEASE** Div A micro switch
- VERIFY** MCR sees **DIV A ≠ DIV B**
- HOLD** Both of the gate micro switches **MADE**
- VERIFY** MCR sees the gate is **CLOSED**
- RELEASE** Div B micro switch
- VERIFY** MCR sees **DIV A ≠ DIV B**
- HOLD** Both of the gate micro switches **MADE**
- VERIFY** MCR sees the gate is **CLOSED**
- RELEASE** The Electric Strike micro switch
- VERIFY** MCR sees the gate is **OPEN**
- CLOSE** The gate
- VERIFY** MCR sees the gate is **CLOSED**
- RESET** The gate with **#25 S/R** key at the **NSRL-Z2** gate box
- VERIFY** MCR sees the gate is **RESET**
- VERIFY** The **BGI2** gate box Gate **Reset** light is **ON**
- OPEN** The gate
- VERIFY** MCR sees the gate is **OPEN**
- VERIFY** The **BGI2** gate box Gate **Reset** light is **OFF**
- CLOSE** The gate

| | | | |
|--------------------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| <input type="checkbox"/> | VERIFY | MCR sees the gate is | CLOSED |
| | RESET | The gate from MCR | |
| <input type="checkbox"/> | VERIFY | MCR sees the gate is | RESET |
| <input type="checkbox"/> | VERIFY | The BGI2 gate box Gate Reset light is | ON |
| | OPEN | The gate | |
| <input type="checkbox"/> | VERIFY | MCR sees the gate is | OPEN |
| <input type="checkbox"/> | VERIFY | The BGI2 gate box Gate Reset light is | OFF |
| | CLOSE | The gate | |
| | FORCE | Sweep in Zone NSRL-Z3 | |
| <input type="checkbox"/> | VERIFY | MCR sees Zone Z3 is | SWEPT |
| | RESET | Gates: BGI1 , BGE2 , BGI2 from MCR | |
| <input type="checkbox"/> | VERIFY | MCR sees Gates: BGI1 <input type="checkbox"/> , BGE2 <input type="checkbox"/> , and BGI2 <input type="checkbox"/> | RESET |
| | PLACE | PEER 27 in Controlled Access (XA), Mode 17 | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in CA CA NA | MODE 17 |
| <input type="checkbox"/> | VERIFY | Z3 Keytree is | COMPLETE |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGI2 with #24 CA key and SR | FAIL |
| <input type="checkbox"/> | VERIFY | PEER 27 goes to SA | MODE 2 |
| | PLACE | PEER 27 in Restricted Access (RA), Mode 9 | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in RA RA NA | MODE 9 |
| <input type="checkbox"/> | VERIFY | Z2 Keytree | INCOMPLETE |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGI2 with S key | FAIL |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGI2 with Blue Card is | FAIL |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGI1 with #24 CA key and SR | FAIL |
| <input type="checkbox"/> | VERIFY | PEER 27 goes to SA | MODE 2 |
| | PLACE | PEER 27 in CA, Mode 16 | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in CA | MODE 16 |
| | FORCE | Sweep of Zone NSRL-Z2 | |
| <input type="checkbox"/> | VERIFY | MCR sees Zones: Z2 <input type="checkbox"/> and Z3 <input type="checkbox"/> | SWEPT |
| <input type="checkbox"/> | VERIFY | MCR sees Gates: BGI1 <input type="checkbox"/> , BGE2 <input type="checkbox"/> , and BGI2 <input type="checkbox"/> | RESET |
| | PLACE | PEER 27 in Controlled Access (XA), Mode 18 | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in CA NA NA | MODE 18 |
| <input type="checkbox"/> | VERIFY | Z2 Keytree is | COMPLETE |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGI2 with #24 CA key and SR | FAIL |
| <input type="checkbox"/> | VERIFY | PEER 27 goes to SA | MODE 2 |
| | PLACE | PEER 27 in Restricted Access (XA), Mode10 | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in RA NA NA | MODE 10 |
| <input type="checkbox"/> | VERIFY | Z2 Keytree | COMPLETE |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGI1 with S key | FAIL |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGI1 with Blue Card is | FAIL |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGI1 with #24 CA key and SR | FAIL |
| <input type="checkbox"/> | VERIFY | PEER 27 goes to SA | MODE 2 |
| | PLACE | PEER 27 in CA, Mode 16 | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in CA | MODE 16 |

- | | | | |
|--------------------------|--------------------------------------------------|---------------------------------------------------------------------------------|-------------------|
| | PLACE | PEER 27 in Restricted Access (Mode 8) | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in Restricted Access | MODE 8 |
| <input type="checkbox"/> | VERIFY | The NSRL-Z2 gate box Restricted Access light is | ON |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGI2 with S key is | SUCCESSFUL |
| | CLOSE | BGI2 | |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGI2 with Blue Card is | SUCCESSFUL |
| | CLOSE | BGI2 | |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGI2 with #24 CA key | FAIL |
| | PLACE | PEER 27 in Safe Access (Mode 2) | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in SA | MODE 2 |
| <input type="checkbox"/> | VERIFY | The NSRL-Z2 gate box Safe Access light is | ON |
| | RELEASE | Key in Z3 keytree | |
| <input type="checkbox"/> | VERIFY | MCR sees Z3 keytree | INCOMPLETE |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGI2 with S key and SR | FAIL |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGI2 with #24 CA key and SR is | SUCCESSFUL |
| | CLOSE | Gate BGI2 | |
| <input type="checkbox"/> | CHECK for acceptance of test of GATE BGI2 | | |

1.5 Test of ENTRY GATE at BGE2

- | | | | |
|--------------------------|----------------|------------------------------------------------------------------------------|----------------------|
| <input type="checkbox"/> | VERIFY | ENTRY Gate at BGE2 has been inspected | |
| | PLACE | PEER 27 in Controlled Access (CA), Mode 16 | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in CA | MODE 16 |
| <input type="checkbox"/> | VERIFY | The Exterior gate box Controlled Access light is | ON |
| | OPEN | Gate BGE2 with Simultaneous Release (SR) and #22 CA Key | |
| <input type="checkbox"/> | VERIFY | Simultaneous Release Buzzer | SOUNDS |
| <input type="checkbox"/> | VERIFY | Simultaneous Release Light | LIGHTS |
| <input type="checkbox"/> | VERIFY | Gate BGE2 is | OPEN |
| <input type="checkbox"/> | VERIFY | MCR sees the gate is | OPEN |
| | SECURE | The Electric Strike micro switch | MADE |
| | HOLD | Both of the gate micro switches | MADE |
| <input type="checkbox"/> | VERIFY | MCR sees the gate is | CLOSED |
| | RELEASE | Div A micro switch | |
| <input type="checkbox"/> | VERIFY | MCR sees | DIV A ≠ DIV B |
| | HOLD | Both of the gate micro switches | MADE |
| <input type="checkbox"/> | VERIFY | MCR sees the gate is | CLOSED |
| | RELEASE | Div B micro switch | |
| <input type="checkbox"/> | VERIFY | MCR sees | DIV A ≠ DIV B |
| | HOLD | Both of the gate micro switches | MADE |
| <input type="checkbox"/> | VERIFY | MCR sees the gate is | CLOSED |
| | RELEASE | The Electric Strike micro switch | |
| <input type="checkbox"/> | VERIFY | MCR sees the gate is | OPEN |
| | CLOSE | The gate | |
| <input type="checkbox"/> | VERIFY | MCR sees the gate is | CLOSED |
| | RESET | The gate with #23 R/A key at the outside gate box | |
| <input type="checkbox"/> | VERIFY | MCR sees the gate is | RESET |

| | | | |
|--------------------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| <input type="checkbox"/> | VERIFY | The BGE2 gate box Gate Reset light is | ON |
| | OPEN | The gate | |
| <input type="checkbox"/> | VERIFY | MCR sees the gate is | OPEN |
| <input type="checkbox"/> | VERIFY | The BGE2 gate box Gate Reset light is | OFF |
| | CLOSE | The gate | |
| | RESET | The gate from MCR | |
| <input type="checkbox"/> | VERIFY | MCR sees the gate is | RESET |
| <input type="checkbox"/> | VERIFY | The BGE2 gate box Gate Reset light is | ON |
| | OPEN | The gate | |
| <input type="checkbox"/> | VERIFY | MCR sees the gate is | OPEN |
| <input type="checkbox"/> | VERIFY | The BGE2 gate box Gate Reset light is | OFF |
| | CLOSE | The gate | |
| | FORCE | Sweep of Zone NSRL-Z3 | |
| <input type="checkbox"/> | VERIFY | MCR sees Zone Z3 | SWEPT |
| | RESET | Gates: BGI1, BGE2, BGI2 from MCR | |
| <input type="checkbox"/> | VERIFY | MCR sees Gates: BGI1 <input type="checkbox"/> , BGE2 <input type="checkbox"/> , and BGI2 <input type="checkbox"/> | RESET |
| | PLACE | PEER 27 in Controlled Access (XA), Mode 17 | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in CA CA NA | MODE 17 |
| <input type="checkbox"/> | VERIFY | Z2 Keytree is | INCOMPLETE |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGE2 with #22 CA key and SR is | SUCCESSFUL |
| | PLACE | PEER 27 in CA, Mode 16 | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in CA | MODE 16 |
| | PLACE | PEER 27 in Restricted Access (XA), Mode 9 | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in RA RA NA | MODE 9 |
| <input type="checkbox"/> | VERIFY | Z2 Keytree is | INCOMPLETE |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGE2 with #22 CA | FAIL |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGE2 with S key is | SUCCESSFUL |
| | CLOSE | BGE2 | |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGE2 with Blue Card is | SUCCESSFUL |
| | CLOSE | Gate BGE2 | |
| | PLACE | PEER 27 in CA, Mode 16 | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in CA | MODE 16 |
| | FORCE | Sweep of Zone NSRL-Z2 | |
| <input type="checkbox"/> | VERIFY | MCR sees Zones: Z2 <input type="checkbox"/> and Z3 <input type="checkbox"/> | SWEPT |
| <input type="checkbox"/> | VERIFY | MCR sees Gates: BGI1 <input type="checkbox"/> , BGE2 <input type="checkbox"/> , and BGI2 <input type="checkbox"/> | RESET |
| | PLACE | PEER 27 in Controlled Access (XA), Mode 18 | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in CA NA NA | MODE 18 |
| <input type="checkbox"/> | VERIFY | Z2 Keytree | COMPLETE |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGE2 with #22 CA key and SR | FAIL |
| <input type="checkbox"/> | VERIFY | PEER 27 goes to SA | MODE 2 |
| | PLACE | PEER 27 in Restricted Access (XA), Mode10 | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in RA NA NA | MODE 10 |
| <input type="checkbox"/> | VERIFY | Z2 Keytree | COMPLETE |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGE2 with S key | FAIL |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGE2 with Blue Card is | FAIL |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGE2 with #22 CA key and | FAIL |

- | | | | |
|--------------------------|---------------|---------------------------------------------------------------------------------|-------------------|
| <input type="checkbox"/> | VERIFY | SR PEER 27 goes to SA | MODE 2 |
| | PLACE | PEER 27 in CA, Mode 16 | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in CA | MODE 16 |
| | PLACE | PEER 27 in Restricted Access (Mode 8) | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in Restricted Access | MODE 8 |
| <input type="checkbox"/> | VERIFY | The Exterior gate box Restricted Access light is | ON |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGE2 with S key is | SUCCESSFUL |
| | CLOSE | BGE2 | |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGE2 with #22 CA key is | FAIL |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGE2 with Blue Card is | SUCCESSFUL |
| | CLOSE | Gate BGE2 | |
| | PLACE | PEER 27 in Safe Access (Mode 2) | |
| <input type="checkbox"/> | VERIFY | PEER 27 is in Safe Access | MODE 2 |
| <input type="checkbox"/> | VERIFY | The Exterior gate box Safe Access light is | ON |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGE2 with S key and SR | FAIL |
| <input type="checkbox"/> | VERIFY | Attempt to open gate BGE2 with #22 CA key and SR is | SUCCESSFUL |
| | CLOSE | Gate BGE2 | |
| <input type="checkbox"/> | CHECK | for test acceptance of ENTRY GATE at BGE2 | |

1.6 Test of Iris Scanner and Local Keytree at GATE BGE1 in Modes 16 and 17

- VERIFY PLACE** **ENTRY Gate at BGE1 has been inspected PEER 27 in CA, Mode 16**
- VERIFY** **PEER 27 is in CA** **MODE 16**
- SCAN** **Valid Personnel # 1 with Iris Scanner at gate BGE1**
- VERIFY** **Valid Personnel is** **RECOGNIZED**
- VERIFY** **Green lights for all keys in NSRL Local keytree at gate BGE1 are** **ON**
- VERIFY** **Attempt to enter BGE1 with any NSRL key # ____ and SR is** **SUCCESSFUL**
- VERIFY** **Corresp Key # ____ amber light is** **ON**
- SCAN** **Valid Personnel # 1 with Iris Scanner at gate BGE1**
- VERIFY** **Valid Personnel # 1 is** **RECOGNIZED**
- VERIFY** **Only missing key green light in NSRLLocal keytree at gate BGE1 is** **ON**
- HAVE** **Valid Personnel # 1 insert and capture missing key in NSRL Local Keytree at gate BGE1**
- VERIFY** **Corresp Key # ____ amber light is** **OFF**
- SCAN** **Valid Personnel # 2 with Iris Scanner at gate BGE1**
- VERIFY** **Valid Personnel # 2 is** **RECOGNIZED**
- VERIFY** **Green lights for all keys in NSRL Local keytree at gate BGE1 are** **ON**
- VERIFY** **Attempt to enter BGE1 with any other NSRL key # ____ and SR is** **SUCCESSFUL**
- VERIFY** **Corresp Key # ____ amber light is** **ON**
- SCAN** **Valid Personnel # 2 with Iris Scanner at gate BGE1**
- VERIFY** **Valid Personnel # 2 is** **RECOGNIZED**
- VERIFY** **Only missing key green light in NSRLLocal keytree at gate BGE1 is** **ON**
- HAVE** **Valid Personnel # 2 insert and capture missing key in NSRL Local Keytree at gate BGE1**
- VERIFY** **Corresp Key # ____ amber light is** **OFF**
- FORCE** **Sweep of Zone NSRL-Z3**
- VERIFY** **MCR sees Zone NSRL-Z3** **SWEPT**
- FORCE** **Reset of Gates: BGI1, BGE2, BGI2**
- VERIFY** **MCR sees Gates: BGI1 □, BGE2 □, and BGI2 □** **RESET**
- PLACE** **PEER 27 in Controlled Access (XA), Mode 17**
- VERIFY** **PEER 27 is in CA,CA,NA** **MODE 17**
- SCAN** **Valid Personnel # 3 with Iris Scanner at gate BGE1**
- VERIFY** **Valid Personnel # 3 is** **RECOGNIZED**

- VERIFY** Green lights for all keys in NSRL Local keytree at gate BGE1 are **ON**
- VERIFY** **Attempt** to enter **BGE1** with any other NSRL key # ___ and **SR** is **SUCCESSFUL**
- VERIFY** Corresp Key # _____ amber light is **ON**
- SCAN** Valid **Personnel # 3** with Iris Scanner at gate BGE1
- VERIFY** **Valid Personnel # 3** is **RECOGNIZED**
- VERIFY** Only missing key green light in NSRLLocal keytree at gate **BGE1** is **ON**
- HAVE** Valid **Personnel # 3** insert and capture missing key in NSRL Local Keytree at gate BGE1
- VERIFY** Corresp Key # _____ amber light is **OFF**
- PLACE** **PEER 27** in CA, Mode 16
- VERIFY** **PEER 27** is in CA **MODE 16**
- PLACE** **PEER 27** in Restricted Access (Mode 8)
- VERIFY** **PEER 27** is in Restricted Access **MODE 8**
- CHECK for acceptance of test of Iris Scanner and Local Keytree at GATE BGE1 in Mode 16**

1.7 Test of Iris Scanner and Local Keystation at GATE BGE1 in Modes 16 and 18

- VERIFY** **ENTRY** Gate at **BGE1** has been inspected
- PLACE** **PEER 27** in CA, Mode 16
- VERIFY** **PEER 27** is in CA **MODE 16**
- SCAN** Valid Personnel with Iris Scanner at gate BGE1
- VERIFY** **Valid Personnel** is **RECOGNIZED**
- VERIFY** **Sweep** Key in **Local** keystation at gate **BGE1** is **RELEASED**
- REPLACE** Key in **local** keystation at gate **BGE1**
- FORCE** **Sweep** of Zone NSRL-Z3
- VERIFY** **MCR** sees Zone NSRL-Z3 **SWEPT**
- FORCE** **Reset** of Gates: **BGI1, BGE2, BGI2**
- VERIFY** **MCR** sees Gates: **BGI1** □, **BGE2** □, and **BGI2** □ **RESET**
- PLACE** **PEER 27** in **Controlled Access (XA), Mode 18**
- VERIFY** **PEER 27** is in CA NA NA **MODE 18**
- SCAN** Valid Personnel with Iris Scanner at gate BGE1
- VERIFY** Key in **Local** keystation at gate **BGE1** is **RELEASED**
- REPLACE** Key in **local** keystation at gate **BGE1**
- VERIFY** Key in local keystation at gate BGE1 is **REPLACED**
- PLACE** **PEER 27** in CA, Mode 16

- VERIFY** **PEER 27** is in **CA** **MODE 16**
- PLACE** **PEER 27** in **Restricted Access (Mode 8)**
- VERIFY** **PEER 27** is in **Restricted Access** **MODE 8**
- CHECK** for acceptance of test of **Iris Scanner and Local Keystation at GATE BGE1 in Modes 16 and 18**

1.8 Test of Entry of BGE1 by one person during experiment using Touchpad

- MOVE** **EB21** sweep key from **MCR2-5** to **MCR7 (NASA)** console
- CAPTURE** **EB21** key in **Zone 1 Sweep** key position
- VERIFY** **EB21** key is **CAPTURED**

- PLACE** **Peer 27** in **NA, Mode 24**
- VERIFY** **Peer 27** is in **NA** **MODE 24**

- VERIFY** After **30 secs TTB B/S** **ENABLE**

- PRESS** **IN** button at **MCR7** console and **hold** for **Permit button**

- PRESS** **Permit** button at **MCR7**
- VERIFY** **MCR** sees **Peer 27** in **XA: CA NA NA** **MODE 18**
- VERIFY** **MCR** sees **TTB B/S** **DISABLED**

- SCAN** **Valid Personnel** with **Iris Scanner** at gate **BGE1**
- VERIFY** **Valid Personnel** is **RECOGNIZED**
- PULL** **First** key from **NSRL** keytree
- VERIFY** **Personnel** for **entry** into **Zone Z1** is **READY**

- Press & Hold** **IN** button at **MCR7** console
- VERIFY** **Simultaneous Release** Buzzer is **ON**

- OPEN** **BGE1**with **First** key at **gate box**
- VERIFY** **MCR** sees gate **BGE1** **OPEN**
- ENTER** **Zone Z1**
- VERIFY** Gate **BGE1** **automatically** **CLOSES**
- VERIFY** **MCR** sees gate **BGE1** **CLOSED**
- VERIFY** **Simultaneous Release** Buzzer is **still** **ON**

- RELEASE** **IN** button
- VERIFY** **Simultaneous Release** Buzzer is **OFF**

- VERIFY** **MCR** sees **Zone Z1** is **still** **SWEPT**
- VERIFY** **MCR** sees **Peer 27** in **XA: CA NA NA** **MODE 18**
- VERIFY** **Booster Key Lockout** at **MCR2** is **still** **CAPTURED**

- Check** for acceptance of test of **Entry of BGE1 by one person during experiment using Touchpad**

1.9 Test of reset of rad and failsafe trips on Chipmunks 133 and 134 with IN pad in Mode 24

- | | | | |
|--------------------------|-------------------------|----------------------------------------------------------------------------------------------|------------------|
| <input type="checkbox"/> | VERIFY | Peer 27 is in NA | MODE 24 |
| | TRIP | Chipmunk NMO 133 | |
| <input type="checkbox"/> | VERIFY | MCR sees Chipmunk NMO 133: Div A <input type="checkbox"/> and Div B <input type="checkbox"/> | RAD INTLK |
| | Press & Hold | IN pad at MCR7 console | |
| <input type="checkbox"/> | VERIFY | MCR sees Chipmunk NMO 133 | RESET |
| <input type="checkbox"/> | VERIFY | MCR sees Chipmunk NMO 133: Div A <input type="checkbox"/> and Div B <input type="checkbox"/> | OK |
| | FAIL | Chipmunk NMO 133 | |
| <input type="checkbox"/> | VERIFY | MCR sees Chipmunk NMO 133: Div A <input type="checkbox"/> and Div B <input type="checkbox"/> | FAILSAFE |
| | Press & Hold | IN pad at MCR7 console | |
| <input type="checkbox"/> | VERIFY | MCR sees Chipmunk NMO 133 | RESET |
| <input type="checkbox"/> | VERIFY | MCR sees Chipmunk NMO 133: Div A <input type="checkbox"/> and Div B <input type="checkbox"/> | OK |
| | TRIP | Chipmunk NMO 134 | |
| <input type="checkbox"/> | VERIFY | MCR sees Chipmunk NMO 134: Div A <input type="checkbox"/> and Div B <input type="checkbox"/> | RAD INTLK |
| | Press & Hold | IN pad at MCR7 console | |
| <input type="checkbox"/> | VERIFY | MCR sees Chipmunk NMO 134 | RESET |
| <input type="checkbox"/> | VERIFY | MCR sees Chipmunk NMO 134: Div A <input type="checkbox"/> and Div B <input type="checkbox"/> | OK |
| | FAIL | Chipmunk NMO 134 | |
| <input type="checkbox"/> | VERIFY | MCR sees Chipmunk NMO 134: Div A <input type="checkbox"/> and Div B <input type="checkbox"/> | FAILSAFE |
| | Press & Hold | IN pad at MCR7 console | |
| <input type="checkbox"/> | VERIFY | MCR sees Chipmunk NMO 134 | RESET |
| <input type="checkbox"/> | VERIFY | MCR sees Chipmunk NMO 134: Div A <input type="checkbox"/> and Div B <input type="checkbox"/> | OK |

- Check for acceptance of test of rad and dailsafe trips on chipmunks 133 and 134 with IN pad in Mode 24

1.10 Test of Entry of BGE1 by 5 persons during experiment using Touchpad

- | | | | |
|--------------------------|----------------|---------------------------------------------------|-----------------|
| | MOVE | EB21 sweep key from MCR2-5 to MCR7 (NASA) console | |
| | CAPTURE | EB21 key in Zone 1 Sweep key position | |
| <input type="checkbox"/> | VERIFY | EB21 key is | CAPTURED |
| | PLACE | Peer 27 in NA, Mode 24 | |
| <input type="checkbox"/> | VERIFY | Peer 27 is in NA | MODE 24 |
| <input type="checkbox"/> | VERIFY | After 30 secs TTB B/S | ENABLE |

| | | | |
|--------------------------|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-------------------|
| | TRIP | Chipmunk # _____ | |
| <input type="checkbox"/> | VERIFY | MCR sees Chipmunk # _____:Div A <input type="checkbox"/> and Div B <input type="checkbox"/> | RAD INTLK |
| | PRESS | IN button at MCR7 console and hold for Permit button | |
| <input type="checkbox"/> | VERIFY | MCR sees Chipmunk NMO _____ | RESET |
| <input type="checkbox"/> | VERIFY | MCR sees Chipmunk NMO _____: Div A <input type="checkbox"/> and Div B <input type="checkbox"/> | OK |
| | PRESS | Permit button at MCR7 | |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 27 in XA: CA NA NA | MODE 18 |
| <input type="checkbox"/> | VERIFY | MCR sees TTB B/S | DISABLED |
| | SCAN | 1st Valid Personnel with Iris Scanner at gate BGE1 | |
| <input type="checkbox"/> | VERIFY | 1st Valid Personnel is | RECOGNIZED |
| | PULL | 1st key from NSRL keytree | |
| | SCAN | 2nd Valid Personnel with Iris Scanner at gate BGE1 | |
| <input type="checkbox"/> | VERIFY | 2nd Valid Personnel is | RECOGNIZED |
| | PULL | 2nd key from NSRL keytree | |
| | SCAN | 3rd Valid Personnel with Iris Scanner at gate BGE1 | |
| <input type="checkbox"/> | VERIFY | 3rd Valid Personnel is | RECOGNIZED |
| | PULL | 3rd key from NSRL keytree | |
| | SCAN | 4th Valid Personnel with Iris Scanner at gate BGE1 | |
| <input type="checkbox"/> | VERIFY | 4th Valid Personnel is | RECOGNIZED |
| | PULL | 4th key from NSRL keytree | |
| | SCAN | 5th Valid Personnel with Iris Scanner at gate BGE1 | |
| <input type="checkbox"/> | VERIFY | 5th Valid Personnel is | RECOGNIZED |
| | PULL | 5th key from NSRL keytree | |
| <input type="checkbox"/> | VERIFY | All Personnel for entry into Zone Z1 | READY |
| | Press & Hold | IN button at MCR7 console | |
| <input type="checkbox"/> | VERIFY | Simultaneous Release Buzzer is | ON |
| | OPEN | BGE1with First key at gate box | |
| <input type="checkbox"/> | VERIFY | MCR sees gate BGE1 | OPEN |
| | ALL | Personnel with gate key enter Zone Z1 | |
| <input type="checkbox"/> | VERIFY | Gate BGE1 automatically | CLOSES |
| <input type="checkbox"/> | VERIFY | MCR sees gate BGE1 | CLOSED |
| <input type="checkbox"/> | VERIFY | Simultaneous Release Buzzer is still | ON |
| | RELEASE | IN button | |
| <input type="checkbox"/> | VERIFY | Simultaneous Release Buzzer is | OFF |
| <input type="checkbox"/> | VERIFY | MCR sees Zone Z1 is still | SWEPT |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 27 in XA: CA NA NA | MODE 18 |
| <input type="checkbox"/> | VERIFY | Booster Key Lockout at MCR2 is still | CAPTURED |
| <input type="checkbox"/> | Check for acceptance of Test of Entry of BGE1 by 5 persons during experiment using Touchpad | | |

- 1.11 Test of Exit of BGE1 by 5 persons, after Entry, during experiment using Touchpad**
- VERIFY** Peer 27 is in **XA: CA NA NA** **MODE 18**
 - VERIFY** Personnel for exit from Zone **Z1** is **READY**
Press & **OUT** button at **MCR7** console
 - VERIFY** **Simultaneous Release** Buzzer is **ON**
 - VERIFY** With exiting personnel **movement** gate **BGE1** **OPENS**
ALLOW **5 valid** personnel **with gate keys** to exit **BGE1**
 - VERIFY** With exiting personnel **outside** and **clear** gate **BGE1** **CLOSES**
 - VERIFY** **MCR** sees gate **BGE1** **CLOSED**
 - VERIFY** **MCR** sees gate **BGE1** is **automatically** **RESET**
 - RELEASE** **OUT** button
 - VERIFY** **Simultaneous Release** Buzzer is **OFF**
 - VERIFY** **MCR** sees **Peer 27** in **XA: CA NA NA** **MODE 18**
 - REPLACE** **5 Keys** in **BGE1** **keytree**
 - VERIFY** **MCR** sees **BGE1** **keytree** **COMPLETE**
 - VERIFY** **MCR** sees **Peer 27** in **XA: CA NA NA** **MODE 18**
 - VERIFY** **MCR** sees **TTB B/S** **DISABLED**
 - PRESS** Mode **Permit** button
 - VERIFY** **MCR** sees **Peer 27** go to **NA** **MODE 24**
 - VERIFY** After **30 secs** **MCR** sees **TTB B/S** is **ENABLED**
 - Check for acceptance of test of Exit of BGE1 by 5 persons, after Entry, during experiment using Touchpad**

END OF TEST PROCEDURE

TTL: Sign for completion of initial testing: _____

Date: ____/____/____

TTL: Sign for completion of final testing: _____

Date: ____/____/____