Title: POWER RANGE UTL CURRENT MEASUREMENT

Purpose: (Include purpose of SOP) CORRELATE Y DECAY WITH KNOWN DECAY HEAT TO VERIFY DETECTOR OPERATION

NOTE: THIS PROCEDURE CANCELS SOP Z-49

3. Attach procedure to this form written according to the following format.
   A. Limitations and Precautions
      1. Nuclear Safety
      2. Environmental Safety
      3. Personnel Safety
      4. Equipment Protection
   B. Prerequisites
   C. Procedure

4. Generated by DN MENDR Date 04/09/79

5. Duration of SOP - Shall be no longer than 90 days from the effective date of the SOP or (a) or (b) below - whichever occurs first.
   (a) SOP will be cancelled by incorporation into existing or new permanent procedure submitted by
   (b) SOP is not valid after

6. (a) Is the procedure Nuclear Safety Related? If "yes", complete Nuclear Safety Evaluation. (Side 2 of this Form) ............... Yes [ ] No [ ]
   (b) Does the procedure affect Environmental Protection? If "yes", complete Environmental Evaluation. (Side 2 of this Form) ............... Yes [ ] No [ ]
   (c) Does the procedure affect radiation exposure to personnel? Yes [ ] No [ ]

NOTE: If all answers are "no", the change may be approved by the Shift Supervisor. If any questions are answered "yes", the change must be approved by the Unit Superintendent.

7. Review and Approval
   ALARA: [ ] Approved - Shift Supervisor 4/10/79
   NRC: [ ] Reviewed - List members of PORC contacted 4/10/79
   R&W: [ ] Approved - Unit Superintendent 4/10/79

8. SOP is Cancelled
   Shift Supervisor/Shift Foreman Date 132 162
1. Title

2. Nuclear Safety Evaluation

Does this SOP:

* (a) increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety? yes ☐ no ☐

* (b) create the possibility for an accident or malfunction of a different type than any evaluated previously in the safety analysis report? yes ☐ no ☐

* (c) reduce the margin of safety as defined in the basis for any technical specification? yes ☐ no ☐

Details of Evaluation (Explain why answers to above questions are "No". Attach additional page if required.)

Evaluation By __________________ Date __________

3. Environmental Impact Evaluation

Does this SOP:

(a) possibly involve a significant environmental impact? yes ☐ no ☐

* (b) have a significant adverse effect on the environment? yes ☐ no ☐

* (c) involve a significant environmental matter or question not previously reviewed and evaluated by the N.R.C. yes ☐ no ☐

Details of Evaluation

Evaluation By __________________ Date __________

* NOTE: If these questions are "Yes", the change must receive N.R.C. approval.

4. Review (PORC review of evaluation is required only when requested by the Station Superintendent/Unit Superintendent. If this review is made, the PORC must consist of two off-site members.)

1. __________________

2. __________________ Off-Site Members __________________ PORC Chairman Signature __________________ Date __________________

5. Approval __________________ Station Superintendent/Unit Superintendent __________________ Date __________________
POWER RANGE
UIC CURRENT MEASUREMENT

PROCEDURE

PURPOSE: This procedure measures UIC current on all power range UICs in order to correlate UIC current measurement with predicted core gamma decay.

METHOD: The following steps provide detailed data taking instructions. Data should be taken once daily, preferably at equal intervals (24 hrs).

It is highly recommended that the same picoammeter be used for all measurements. Keithley 419, ser no 72053, has been used for this in the past.

The Keithley must be powered through an isolation XFM90, and must be permitted to float with respect to ground.

Disposition: Through Doug Weaver to LaGonda.

Data taker is requested to sign on bottom of Table 1 Page 1.
PROCEDURE

CHANNEL A (B, C, D)

1. Obtain permission to place appropriate channel out of service.

2. Secure high voltage at HV power supply for NC 0 0 1 4 7 8 located in cabinet 37 2 9 3 5 8.

3. In rear of cabinet, remove triaxial input cable from the upper JEC: input (JA). Connect triaxial to coaxial adapter to cable. Coaxial cable shall have its shield shorted to both the inner and outer triaxial shield of the cable. By means of this adapter:

   TRIAX ADAPTER
   SIG INPUT                COAX
   JUMPER                    TO KEITHLEY INPUT

4. Place 50 Keithley picoammeter in highest range (10^-1 or above) and connect the signal input to the Keithley input.

5. Range the Keithley to the appropriate scale. (Actual current will be between 10^-9 and 10^-8Amps initially.)

6. Record current under "HV OFF" in Table 1.

7. Range Keithley to highest range (10^-1 or above) and turn HV on.

8. Range Keithley to the appropriate scale. Actual current between
10⁻⁹ AND 10⁻⁸ A INITIALLY.

4. RECORD CURRENT UNDER "HV ON" IN TABLE 1.

10. RECORD DATE AND TIME OF READING IN APPROPRIATE COLUMN OF TABLE 1.

11. SECURE HV AFTER RANGING KEITHLEY UPWARDS (THIS SHOULD BE DONE FOR ALL POWER TRANSIENTS).

12. RECONNECT TRIAXIAL CABLE TO JA IN CABINET, AND DISCONNECT CABLE FROM JB (LOWER DETECTOR INPUT).

13. PERFORM STEPS 4 THROUGH 11 FOR THE LOWER INPUT.

14. RESTORE CHANNEL TO SERVICE AFTER DISCONNECTING KEITHLEY.

15. PERFORM STEPS 1 THROUGH 14 ON ALL FOUR CHANNELS, RECORDING DATA IN APPROPRIATE PLACE IN TABLE 1.
<table>
<thead>
<tr>
<th>CABINET N</th>
<th>CHANNEL</th>
<th>JACK (UPPER)</th>
<th>JACK (LOWER)</th>
<th>CURRENT (mA)</th>
<th>HU OFF</th>
<th>HU ON</th>
<th>DATE</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>37</td>
<td>N15(A)</td>
<td>JA</td>
<td>JB</td>
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<tr>
<td>30</td>
<td>N16(B)</td>
<td>JA</td>
<td>JB</td>
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<td></td>
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<tr>
<td>34</td>
<td>N17(C)</td>
<td>JA</td>
<td>JB</td>
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<td>38</td>
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<td>JB</td>
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</table>

KEITHLEY PICOAMMETER MODEL _______ SER. NO. _______