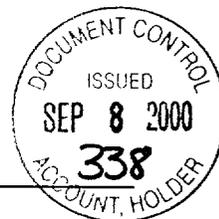


**CHANGE OUT  
TABLE 4-1 WITH  
ATTACHED PAGES  
FOR THIS CHANGE  
NOTICE 00-002  
RERP REV. 23**

CALLAWAY PLANT  
RERP  
CHANGE FORM



1. Originator: Gary R. Pendergraff Date: 7/06/00

2. Plan section(s): Table 4-1

3. References: SOS 00-0108  
Calculation EPCI-98-01

4. Is this change evaluated under an existing Licensing Impact Review (LIR) (APA-ZZ-00140)?  Yes  No

If "yes" attach a copy of the LIR or provide reference (CMP, RFR, etc.) N/A

If "no", a LIR should be performed and attached or provide sufficient information for completion of the LIR by the responsible department (not required for hidden text only change).

5. Description of Change: See attached page.

6. Justification: See attached page.

(attach extra pages as necessary)

7. Originating Department Head Approval N/A

8. Concurrence with Need for Change

Approved  Rejected  Revision No. RERP CN 05-02, REV 23

[Signature] Date 8/7/00  
Superintendent, Protective Services



RERPCN# 00-02  
Rev.# 23

A210.0038

ATTACHMENT to CA0667C

5. Description of Change:

This Change Notice will raise the existing setpoints for GT-RE-21B from  $>2.35E+8$  to  $>2.42E+8$  uCi/sec for EAL 1C.1 and raise the setpoint for GT-RE-21B from  $>2.35E+9$  to  $>2.42E+9$  uCi/sec for EAL 1D.1 in the RERP Table 4-1, Emergency Action Levels and in EIP-ZZ-00101, Emergency Action Levels based on calculated setpoints as documented in EPCI-98-01.

A review of the above EPCI was performed and an error was noted in the setpoints for AB-RE-0111 through 0114 and FC-RE-0385. The corrected setpoints for these monitors are 27 mR/hr and 150 mR/hr. EPCI-98-01, Rev.001 has been initiated and approved. Changes reflecting these setpoint values will be made to EAL 1B.2 in the RERP Table 4-1, Emergency Action Levels and in EIP-ZZ-00101, Emergency Action Levels based on calculated setpoints as documented in EPCI-98-01.

6. Justification:

This change IS NOT a decrease in effectiveness as identified in NRC Inspection Report 2000-004-02 Unresolved Item and NRC Inspection Report 50-483/00-11. In the case of GT-RE-21B setpoints, PARs could be made to offsite officials prematurely which could result in confusion.

**Table 4-1  
EMERGENCY ACTION LEVELS**

**Group 1 ABNORMAL RADIATION EVENTS  
Offsite Events**

UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
<p>A. Any <b>Unplanned Release</b> of Radioactivity to the Environment That Exceeds <b>2 Times</b> the Radiological Effluent Control Limits in the ODCM, (APA-ZZ-01003) for <math>\geq 60</math> minutes. MODES: At All Times</p> <p><b>Indicators</b> 1. <u>All</u> of the following: a. A <b>valid alarm</b> and reading on <u>any</u> of the following effluent monitors: HB-RE-18 GT-RE-21B GH-RE-10B b. The valid reading is 2 times the Hi Hi alarm setpoint value. c. The release <b>cannot</b> be terminated within 60 minutes of the alarm actuation.</p> <p><b>OR</b> 2. <u>Both</u> of the following: a. <b>Confirmed</b> sample analysis indicates that a release exceeding 2 times the applicable values of the ODCM (APA-ZZ-01003), has occurred. b. The release <b>cannot</b> be terminated within 60 minutes.</p>	<p>B. Any <b>Unplanned Release</b> of Radioactivity to the Environment That Exceeds <b>200 Times</b> the Radiological Effluent Control Limits in the ODCM, (APA-ZZ-01003) for <math>\geq 15</math> minutes. MODES: At All Times</p> <p><b>Indicators</b> 1. <u>All</u> of the following: a. A <b>valid alarm</b> and reading on <u>any</u> of the following effluent monitors: HB-RE-18 GT-RE-21B GH-RE-10B b. The valid reading is 200 times the Hi Hi alarm setpoint value. c. The release <b>cannot</b> be terminated within 15 minutes of the alarm actuation.</p> <p align="center"><b>CN 00-002</b></p> <p><b>OR</b> 2. <u>Both</u> of the following: a. A <b>Valid reading</b> on <u>any</u> of the following monitors: AB-RE-0111 <math>&gt; 42-27</math> mrem/hr AB-RE-0112 <math>&gt; 42-27</math> mrem/hr AB-RE-0113 <math>&gt; 42-27</math> mrem/hr AB-RE-0114 <math>&gt; 42-27</math> mrem/hr FC-RE-0385 <math>&gt; 65-150</math> mrem/hr b. The release <b>cannot</b> be terminated within 15 minutes.</p> <p><b>OR</b> 3. <u>Both</u> of the following: a. <b>Confirmed</b> sample analysis indicates that a release exceeding 200 times the applicable values of the ODCM (APA-ZZ-01003), has occurred. b. The release <b>cannot</b> be terminated within 15 minutes.</p>	<p>C. <b>EAB Dose</b> Resulting From an <b>Actual or Imminent</b> Release of Gaseous Radioactivity Exceeds <b>100 mrem TEDE</b> or <b>500 mrem CDE</b> Thyroid for the Actual or Projected Duration of the Release. MODES: At All Times</p> <p><b>Indicators</b> <u>Any</u> of the following: <b>CN 00-002</b></p> <p>*1. A <b>valid reading</b> on the Unit Vent monitor, GT-RE-21B, <math>&gt; 2.352.42E+8</math> <math>\mu\text{Ci/sec}</math> for 15 minutes or longer. *2. <u>Both</u> of the following: a. A <b>Valid reading</b> on any of the following monitors: AB-RE-0111 <math>&gt; 148</math> mrem/hr AB-RE-0112 <math>&gt; 148</math> mrem/hr AB-RE-0113 <math>&gt; 148</math> mrem/hr AB-RE-0114 <math>&gt; 148</math> mrem/hr FC-RE-0385 <math>&gt; 865</math> mrem/hr b. The reading has been, or is expected to be, exceeded for 15 minutes or longer.</p> <p>3. A <b>valid dose projection</b> indicates <math>&gt; 100</math> mrem TEDE or <math>&gt; 500</math> mrem CDE thyroid dose at, or beyond, the <b>EXCLUSION AREA BOUNDARY</b> using in plant rad data or field monitoring team survey results.</p> <p>4. Field survey results at, or beyond, the EAB corresponding to <math>&gt; 100</math> mrem/hr TEDE for 1 hour (or expected to continue for 1 hour) or <math>&gt; 500</math> mrem/hr CDE thyroid for 1 hour of inhalation.</p> <p>*Declare the event using this indicator <u>only</u> if actual dose projections per Indicator 3 cannot be performed within 15 minutes of the monitors exceeding the reading.</p>	<p>D. <b>EAB Dose</b> Resulting From an <b>Actual or Imminent</b> Release of Gaseous Radioactivity Exceeds <b>1000 mrem TEDE</b> or <b>5000 mrem CDE</b> Thyroid for the Actual or Projected Duration of the Release. MODES: At All Times</p> <p><b>Indicators</b> <u>Any</u> of the following: <b>CN 00-002</b></p> <p>*1. A <b>valid reading</b> on the Unit Vent monitor, GT-RE-21B, <math>&gt; 2.352.42E+9</math> <math>\mu\text{Ci/sec}</math> for 15 minutes or longer. *2. <u>Both</u> of the following: a. A <b>Valid reading</b> on any of the following monitors: AB-RE-0111 <math>&gt; 1480</math> mrem/hr AB-RE-0112 <math>&gt; 1480</math> mrem/hr AB-RE-0113 <math>&gt; 1480</math> mrem/hr AB-RE-0114 <math>&gt; 1480</math> mrem/hr FC-RE-0385 <math>&gt; 8650</math> mrem/hr b. The reading has been, or is expected to be, exceeded for 15 minutes or longer.</p> <p>3. A <b>valid dose projection</b> indicates <math>&gt; 1000</math> mrem TEDE or <math>&gt; 5000</math> mrem CDE thyroid dose at, or beyond, the <b>EXCLUSION AREA BOUNDARY</b> using in plant rad data or field monitoring team survey results.</p> <p>4. Field survey results at, or beyond, the EAB corresponding to <math>&gt; 1,000</math> mrem/hr TEDE for 1 hour (or expected to continue for 1 hour) or <math>&gt; 5,000</math> mrem/hr CDE thyroid for 1 hour of inhalation.</p> <p>* Declare the event using this indicator <u>only</u> if actual dose projections per Indicator 3 cannot be performed within 15 minutes of the monitors exceeding the reading.</p>

**Table 4-1**  
**EMERGENCY ACTION LEVELS**

**Group 1 ABNORMAL RADIATION EVENTS**  
**Onsite Events**

<u>UNUSUAL EVENT</u>	<u>ALERT</u>	<u>ALERT</u>
<p><b>E.*</b> An Unexpected Increase in Plant Radiation.</p> <p>MODES: At All Times</p> <p><b><u>Indicators</u></b> <u>Any of the following:</u></p> <ol style="list-style-type: none"> <li>Spent Fuel Pool level is decreasing on EC-LI-0039A with Normal makeup being added, and all irradiated fuel assemblies remain covered.</li> <li>Refueling Pool level is decreasing on BB-LI-0053A or B with Normal makeup being added, and all irradiated fuel assemblies remain covered.</li> <li>Any valid (Confirmed by HP survey) ARM (other than a Group 1, G. Safe Shutdown ARM) &gt;1000 times normal. (Normal levels can be considered as the monitor reading prior to the noticed increase.)</li> </ol> <p>* This Initiating Condition is not meant to apply to anticipated temporary increases due to planned events (e.g., incore detector movement, radwaste container movement, depleted resin transfers, upper internal movements, etc.)</p>	<p><b>F.*</b> Major Damage to Irradiated Fuel or Loss of Water Level That Has or Will Result in the Uncovering of Irradiated Fuel Outside the Reactor Vessel.</p> <p>MODES: At All Times Unless Noted</p> <p><b><u>Indicators</u></b> <u>Any of the following:</u></p> <ol style="list-style-type: none"> <li>A <b>VALID</b> Hi-Hi Alarm on Fuel Building exhaust monitors GG-RE-27 <u>or</u> 28 (Channel 273 <u>or</u> 283).</li> <li>Containment refueling bridge area radiation monitor (SD-41) &gt; 100 mR/hr. (Mode 6 only.)</li> <li>Fuel building area radiation monitor (SD-37 <u>or</u> 38) &gt; 30 mR/hr.</li> <li>Report of visual observation of loss of water level resulting in irradiated fuel being uncovered.</li> </ol> <p>* This Initiating Condition is not meant to apply to anticipated temporary increases due to planned events (e.g., incore detector movement, radwaste container movement, depleted resin transfers, upper internal movements, etc.)</p>	<p><b>G.*</b> Release of Rad Material, or an Increase in Rad Level that <u>Either</u> Impedes Safe Operations or the Ability to Establish or Maintain Cold Shutdown.</p> <p>MODES: At All Times</p> <p><b><u>Indicators</u></b> <u>Any of the following:</u></p> <ol style="list-style-type: none"> <li>Valid (confirmed by HP) reading on SD-33 (Control Room) &gt;15 mR/hr.</li> <li>Valid (confirmed by HP) reading on the following Safe Shutdown ARMs: SDRE-26 AB 2026 PC Changeout SDRE-23 AB 2000 RHR Hx Area Corridor SDRE-15 AB 1974 West Corridor-Central SDRE-16 AB 1974 West Corridor-South &gt; 1000 times normal (normal levels can be considered as the monitor reading prior to the noticed increase).</li> </ol> <p>* This Initiating Condition is not meant to apply to anticipated temporary increases due to planned events (e.g., incore detector movement, radwaste container movement, depleted resin transfers, upper internal movements, etc.)</p>

**Table 4-1  
EMERGENCY ACTION LEVELS**

**Group 2 FISSION PRODUCT BARRIERS**

A. <u>UNUSUAL EVENT</u>  Any <u>CONTAINMENT BARRIER</u> Indicator	B. <u>ALERT</u>  Any <u>RCS BARRIER</u> Indicator or Any <u>FUEL CLAD BARRIER</u> Indicator	C. <u>SITE EMERGENCY</u>  Any <u>RCS BARRIER</u> Indicator and Any <u>FUEL CLAD BARRIER</u> Indicator	D. <u>SITE EMERGENCY</u>  A <u>CTMT BARRIER</u> <u>Loss</u> Indicator and Any <u>RCS or FUEL CLAD BARRIER</u> Indicator	E. <u>GENERAL EMERGENCY</u>  A <u>Loss</u> Indicator from any two barriers and Any Indicator from the third									
<b>CONTAINMENT BARRIER</b> MODES: 1-4	<b>RCS BARRIER</b> MODES: 1-4		<b>FUEL CLAD BARRIER</b> MODES: 1-4										
<p><b>Loss indicators:</b></p> <ol style="list-style-type: none"> <li><u>Containment Pressure</u> <ol style="list-style-type: none"> <li>A rapid unexplained loss of CTMT pressure following an initial increase in pressure.</li> </ol> </li> <li>or</li> <li>CTMT pressure or sump level not increasing with a LOCA.</li> <li><u>Containment Isolation Valve Status</u> Incomplete CTMT isolation allowing a direct release to the environment, following a valid CTMT isolation signal (CISA, CISB, CPIS).</li> <li><u>SG Release with Primary-Secondary Leakage</u> <ol style="list-style-type: none"> <li>Pri-to-sec leakage verified greater than 150 gpd per SG. T.S. 3.4.6.2 (ITS 3.4.13)</li> </ol> </li> <li>and</li> <li>Any of the following:           <ol style="list-style-type: none"> <li>The leaking SG pressure is decreasing in an uncontrolled manner or completely depressurized.</li> <li>Use of the ruptured SG PORV for cool down or temperature control.</li> <li>The leaking SG is supplying the TDAFW turbine.</li> </ol> </li> </ol> <p><b>Potential Loss indicators:</b></p> <ol style="list-style-type: none"> <li><u>Critical Safety Function Status</u> Meet the entry requirements for FRZ.1, Red Path Summary for CTMT.</li> <li><u>Containment Pressure</u> <ol style="list-style-type: none"> <li>H2 concentration in containment &gt;4%.</li> </ol> </li> <li>or</li> <li>Less than 1 full train of Ctmt spray and Ctmt cooling fans, with Ctmt pressure greater than 27 psig.</li> <li><u>Significant Radioactive Inventory in Ctmt</u> GT-RE-59 or 60 (Channels 591 or 601) reading &gt;1.5 E+4 R/hr</li> <li><u>Core Exit Thermocouples</u> <ol style="list-style-type: none"> <li>Core exit TCs &gt;1200°F and restoration procedures not effective in 15 minutes.</li> </ol> </li> <li>or</li> <li>Core exit TCs &gt;700°F and RVLIS (pumps off) &lt;40% and restoration procedures not effective in 15 minutes.</li> </ol>	<p><b>Loss indicators:</b></p> <ol style="list-style-type: none"> <li><u>RCS Leak Rate</u> Safety Injection initiated with a loss of subcooling (less than instrument error) using Attachment 2 or 3 of Emerg. Procedure E-0.</li> <li><u>SG Tube Rupture</u> <ol style="list-style-type: none"> <li>Any of the following:               <ol style="list-style-type: none"> <li>GE-RE-92 (Channel 925) &gt;2.0E-5 μCi/cc</li> <li>BM-RE-25 (Channel 256) &gt;1.0E-4 μCi/cc</li> <li>SJ-RE-02 (Channel 026) &gt;1.0E-4 μCi/cc</li> <li>Level in any SG continues to increase in an uncontrolled manner</li> </ol> </li> </ol> </li> <li>and</li> <li>Any of the following:           <ol style="list-style-type: none"> <li>The ruptured SG pressure is decreasing in an uncontrolled manner or completely depressurized.</li> <li>Use of the ruptured SG PORV for cool down or temperature control.</li> <li>The leaking SG is supplying the TDAFW turbine.</li> </ol> </li> <li><u>Containment Radiation Monitoring</u> GT-RE-59 or 60 (Channels 591 or 601) reading &gt; 6.4 E+0 R/hr.</li> </ol> <p><b>Potential Loss indicators:</b></p> <ol style="list-style-type: none"> <li><u>Critical Safety Function Status</u> Meet the entry requirement for FRH.1, Red Path Heat Sink or FRP.1, Red Path for Integrity.</li> <li><u>RCS Leak Rate</u> RCS leakage &gt;50 gpm.</li> <li><u>SG Tube Rupture</u> <ol style="list-style-type: none"> <li>Any of the following:               <ol style="list-style-type: none"> <li>GE-RE-92 (Channel 925) &gt;2.0 E-5 μCi/cc</li> <li>BM-RE-25 (Channel 256) &gt;1.0 E-4 μCi/cc</li> <li>SJ-RE-02 (Channel 026) &gt;1.0 E-4 μCi/cc</li> <li>Level in any SG continues to increase in an uncontrolled manner.</li> </ol> </li> </ol> </li> <li>and</li> <li>the primary-to-secondary leak rate exceeds 50 gpm.</li> </ol>		<p><b>Loss indicators:</b></p> <ol style="list-style-type: none"> <li><u>Critical Safety Function Status</u> Meet the entry requirements for FRC.1, Red Path for Core cooling.</li> <li><u>Primary Coolant Activity Level</u> RCS coolant activity &gt;300μCi/cc dose equivalent I-131.</li> <li><u>Containment Radiation Monitoring</u> GT-RE-59 or 60 (Channels 591 or 601) reading &gt;2.8E+3 R/hr.</li> </ol> <p><b>Potential Loss indicator:</b></p> <ol style="list-style-type: none"> <li><u>Critical Safety Function Status</u> Meet the entry requirements for FRC.2, Orange Path for Core Cooling or FRH.1, Red Path for Heat Sink.</li> <li><u>Core Exit Thermocouples</u> Core exit TCs &gt;700°F.</li> <li><u>Reactor Vessel Water Level</u> <ol style="list-style-type: none"> <li>RVLIS (Pumps Off) less than 40%</li> </ol> </li> <li>or</li> <li>RVLIS (Pumps On) less than minimum           <table border="1" data-bbox="1701 1161 1974 1315"> <thead> <tr> <th>RCP's on</th> <th>Minimum</th> </tr> </thead> <tbody> <tr> <td>4</td> <td>44</td> </tr> <tr> <td>3</td> <td>30</td> </tr> <tr> <td>2</td> <td>20</td> </tr> <tr> <td>1</td> <td>13</td> </tr> </tbody> </table> </li> </ol>	RCP's on	Minimum	4	44	3	30	2	20	1	13
RCP's on	Minimum												
4	44												
3	30												
2	20												
1	13												

**Table 4-1**  
**EMERGENCY ACTION LEVELS**

**Group 3 HAZARDS AFFECTING PLANT SAFETY**  
**Security Events**

<u>UNUSUAL EVENT</u>	<u>ALERT</u>	<u>SITE EMERGENCY</u>	<u>GENERAL EMERGENCY</u>
<p>A. Confirmed Security Event Which Indicates a Potential Degradation in the Level of Safety of the Plant.</p> <p>MODES: At All Times</p>	<p>B. Security Event in the Plant Protected Area.</p> <p>MODES: At All Times</p>	<p>C. Security Event in a Safe Shutdown Area.</p> <p>MODES: At All Times</p>	<p>D. Security Event Resulting in a Loss of the Ability to Reach and Maintain Cold Shutdown.</p> <p>MODES: At All Times</p>
<p><b><u>Indicators</u></b> <u>Any</u> of the following:</p> <ol style="list-style-type: none"> <li>1. Bomb device discovered within the plant Protected Area and outside the following Safe Shutdown Areas:               <ol style="list-style-type: none"> <li>a. Area 5</li> <li>b. Containment</li> <li>c. Aux Feed Pump Rooms</li> <li>d. Aux Building</li> <li>e. Diesel Generator Building</li> <li>f. UHS Cooling Tower</li> <li>g. ESW Pumphouse</li> <li>h. Control Building</li> <li>i. RWST</li> <li>j. Fuel Building</li> </ol> </li> <li>2. Confirmed report from the Shift Security Supervisor of an attempted entry, sabotage or security threat that cannot be properly compensated for within 10 minutes.</li> </ol>	<p><b><u>Indicators</u></b> Confirmed report by the Shift Security Supervisor of an intrusion by a hostile force into the plant Protected Area.</p>	<p><b><u>Indicators</u></b> <u>Any</u> of the following</p> <ol style="list-style-type: none"> <li>1. Bomb device discovered within <u>any</u> of the following areas:               <ol style="list-style-type: none"> <li>a. Area 5</li> <li>b. Containment</li> <li>c. Aux Feed Pump Rooms</li> <li>d. Aux Building</li> <li>e. Diesel Generator Building</li> <li>f. UHS Cooling Tower</li> <li>g. ESW Pumphouse</li> <li>h. Control Building</li> <li>i. RWST</li> <li>j. Fuel Building</li> </ol> </li> <li>2. Confirmed report from the Shift Security Supervisor of an intrusion by a hostile force into <u>any</u> of the following areas:               <ol style="list-style-type: none"> <li>a. Area 5</li> <li>b. Containment</li> <li>c. Aux Feed Pump Rooms</li> <li>d. Aux Building</li> <li>e. Diesel Generator Building</li> <li>f. UHS Cooling Tower</li> <li>g. ESW Pumphouse</li> <li>h. Control Building</li> <li>i. RWST</li> <li>j. Fuel Building</li> </ol> </li> </ol>	<p><b><u>Indicators</u></b> <u>Any</u> of the following:</p> <ol style="list-style-type: none"> <li>1. Occupation of the Control Room by a hostile force.</li> <li>2. Occupation of the Aux Shutdown Panel by a hostile force.</li> </ol>

**Table 4-1**  
**EMERGENCY ACTION LEVELS**

**Group 3 HAZARDS AFFECTING PLANT SAFETY**

**Fires**

<u>UNUSUAL EVENT</u>	<u>ALERT</u>
<p>E. Fire Within Protected Area Boundary Not Extinguished Within 15 Minutes of Verification. MODES: At All Times</p> <p><b>Indicators</b> 1. Fire in or <u>adjacent</u> to <u>any</u> of the following: a. Area 5 b. Containment c. Aux Feed Pump Rooms d. Aux Building e. Diesel Generator Building f. UHS Cooling Tower g. ESW Pumphouse h. Control Building i. RWST j. Fuel Building <u>and</u> 2. Not extinguished within 15 minutes of control room verification of a fire.</p>	<p>F. Fire Affecting the Operability of Plant Safety Systems Required to Establish or Maintain Safe Shutdown. MODES: At All Times</p> <p><b>Indicators</b> 1. Fire in <u>any</u> of the following areas: a. Area 5 b. Containment c. Aux Feed Pump Rooms d. Aux Building e. Diesel Generator Building f. UHS Cooling Tower g. ESW Pumphouse h. Control Building i. RWST j. Fuel Building <u>and</u> 2. There is visible damage to permanent structures or equipment, affecting the operability of safety related equipment.</p>

**Natural and Destructive Events**

<u>UNUSUAL EVENT</u>	<u>ALERT</u>
<p>G. Natural and Destructive Phenomena Affecting the Protected Area. MODES: At All Times</p> <p><b>Indicators</b> <u>Any</u> of the following: 1. a. Response spectrum recorder operating annunciator 98E alarms in the Control Room <u>and</u> b. Verified to be a real event per OTO-SG-00001. 2. Report of a turbine rotating component failure resulting in casing penetration or major damage to seals causing a rapid loss of lubricating oil or hydrogen. 3. Explosion, vehicle crash or tornado in or <u>adjacent</u> to <u>any</u> of the following: a. Area 5 b. Containment c. Aux Feed Pump Rooms d. Aux Building e. Diesel Generator Building f. UHS Cooling Tower g. ESW Pumphouse h. Control Building i. RWST j. Fuel Building</p>	<p>H. Natural and Destructive Phenomena Affecting a Safe Shutdown Area. MODES: At All Times</p> <p><b>Indicators</b> <u>Any</u> of the following: 1. a. Operating basis earthquake annunciator 98D alarms in the Control Room <u>and</u> b. Earthquake greater than OBE levels (0.12g) in the horizontal and vertical directions as indicated by LIGHT "OSG-AE-1" <u>or</u> LIGHT "OSG-AE-2" 2. a. Report of a tornado, high wind, vehicle crash, explosion, or other natural or destructive phenomena to <u>any</u> of the following Safe Shutdown areas: 1. Area 5 2. Containment 3. Aux Feed Pump Rooms 4. Aux Building 5. Diesel Generator Building 6. UHS Cooling Tower 7. ESW Pumphouse 8. Control Building 9. RWST 10. Fuel Building <u>and</u> b. There is visible damage to permanent structures or equipment, affecting plant operations.</p>

**Table 4-1**  
**EMERGENCY ACTION LEVELS**

**Group 3 HAZARDS AFFECTING PLANT SAFETY**

**Toxic Gas**

<u>UNUSUAL EVENT</u>	<u>ALERT</u>
<p>I. Release of Toxic or Flammable Gases Deemed Detrimental to Safe Operation of the Plant.</p> <p>MODES: At All Times</p> <p><b>Indicators</b> <u>Any</u> of the following:</p> <ol style="list-style-type: none"> <li>Report or detection of toxic or flammable gases that enter within the Exclusion Area Boundary, that have created a HAZARDOUS ATMOSPHERE per CTP-ZZ-01300, deemed detrimental to safe operation.</li> <li>Confirmed report by local, County or State Officials of potential evacuation of site personnel as determined from the DOT evacuation tables for selected hazardous materials in the DOT Emergency Response Guide for Hazardous Materials.</li> </ol>	<p>J. Release of Toxic or Flammable Gases Within a Facility Structure Which Jeopardizes Operation of Systems Required to Establish or Maintain Cold Shutdown.</p> <p>MODES: At All Times</p> <p><b>Indicators</b> <u>Any</u> of the following:</p> <ol style="list-style-type: none"> <li>Report or detection of toxic or flammable gases, not properly contained, within or <u>adjacent</u> to any of the following Safe Shutdown Areas, that have created a HAZARDOUS ATMOSPHERE per CTP-ZZ-01300, jeopardizing operation of systems required to establish or maintain Cold Shutdown               <ol style="list-style-type: none"> <li>Area 5</li> <li>Containment</li> <li>Aux Feed Pump Rooms</li> <li>Aux Building</li> <li>Diesel Generator Building</li> <li>UHS Cooling Tower</li> <li>ESW Pumphouse</li> <li>Control Building</li> <li>RWST</li> <li>Fuel Building</li> </ol> </li> </ol>

**Control Room Evacuation Events**

<u>ALERT</u>	<u>SITE EMERGENCY</u>
<p>K. Control Room Evacuation Has Been Initiated.</p> <p>MODES: At All Times</p> <p><b>Indicators</b> Entry into OTO-ZZ-00001, Control Room Inaccessibility, is required.</p>	<p>L. Control Room Evacuation Has Been Initiated and Plant Control Cannot Be Established.</p> <p>MODES: At All Times</p> <p><b>Indicators</b></p> <ol style="list-style-type: none"> <li>Entry into OTO-ZZ-00001, Control Room Inaccessibility, is required.</li> </ol> <p><u>and</u></p> <ol style="list-style-type: none"> <li>Control of the Aux Feed System and a SG PORV for cooldown cannot be established within 15 minutes.</li> </ol>

**Table 4-1**  
**EMERGENCY ACTION LEVELS**

**Group 4 SYSTEM MALFUNCTIONS**  
**Annunciator Events**

<u>UNUSUAL EVENT</u>	<u>ALERT</u>	<u>SITE EMERGENCY</u>
<p>A. Unplanned Loss of Most or All Alarms (Annunciators) for Greater Than 15 Minutes.</p> <p>MODES: 1-4</p> <p><u>Indicators</u></p> <p>1. <u>Any</u> of the following:</p> <ul style="list-style-type: none"> <li>a. 3 of 4 field power supplies indicate &lt; 105 volts for greater than 15 minutes (loss of all annunciators) and not a result of planned action.</li> <li>b. Field Power Supply Bus voltage is less than 105 volts for greater than 15 minutes (loss of all annunciators) and not a result of planned action.</li> <li>c. Ten or more logic power supplies have failed for greater than 15 minutes (loss of all annunciators) and not a result of planned action.</li> <li>d. Five or more Multiplexer Adapter Rack Fuses have failed for greater than 15 minutes and not a result of planned action.</li> </ul> <p><u>or</u></p> <p>2. <u>All</u> of the following:</p> <ul style="list-style-type: none"> <li>a. Any combination of power supplies (including Optical Isolators) or Multiplexer Adapter Rack Fuses have failed for greater than 15 minutes.</li> <li>b. Any <u>minimum compensatory actions</u>, per OTO-RK-00001, cannot be maintained.</li> <li>c. The loss does not result from planned action.</li> </ul>	<p>B. Unplanned Loss of Most or All Annunciators With Either a Transient In Progress, or the Plant Computer is Unavailable.</p> <p>MODES: 1-4</p> <p><u>Indicators</u></p> <p>1. <u>Any</u> of the following:</p> <ul style="list-style-type: none"> <li>a. 3 of 4 field power supplies indicate &lt; 105 volts for greater than 15 minutes (loss of all annunciators) and not a result of planned action.</li> <li>b. Field Power Supply Bus voltage is less than 105 volts for greater than 15 minutes (loss of all annunciators) and not a result of planned action.</li> <li>c. Ten or more logic power supplies have failed for greater than 15 minutes (loss of all annunciators) and not a result of planned action.</li> <li>d. Five or more Multiplexer Adapter Rack Fuses have failed for greater than 15 minutes and not a result of planned action.</li> </ul> <p><u>or</u></p> <p>2. <u>All</u> of the following:</p> <ul style="list-style-type: none"> <li>a. Any combination of power supplies (including Optical Isolators) or Multiplexer Adapter Rack Fuses have failed for greater than 15 minutes.</li> <li>b. Any <u>minimum compensatory actions</u>, per OTO-RK-00001, cannot be maintained.</li> <li>c. The loss does not result from planned action.</li> </ul> <p><u>and</u></p> <p>3. <u>Any</u> of the following:</p> <ul style="list-style-type: none"> <li>a. A change in reactor power greater than <math>\pm 10\%</math>.</li> <li>b. Safety injection initiation.</li> <li>c. Compensatory plant parameters monitored via the plant computer, per OTO-RK-00001, are not valid or cannot be obtained.</li> </ul>	<p>C. Inability to Monitor a Significant Transient in Progress.</p> <p>MODES: 1-4</p> <p><u>Indicators</u></p> <p>1. <u>Any</u> of the following:</p> <ul style="list-style-type: none"> <li>a. 3 of 4 field power supplies indicate &lt; 105 volts (loss of all annunciators).</li> <li>b. Field Power Supply Bus voltage is less than 105 volts (loss of all annunciators).</li> <li>c. Ten or more logic power supplies have failed (loss of all annunciators).</li> <li>d. Five or more Multiplexer Adapter Rack Fuses have failed (loss of all annunciators).</li> </ul> <p><u>or</u></p> <p>2. <u>All</u> of the following:</p> <ul style="list-style-type: none"> <li>a. Any combination of power supplies (including Optical Isolators) or Multiplexer Adapter Rack Fuses have failed.</li> <li>b. Any <u>minimum compensatory actions</u>, per OTO-RK-00001, cannot be maintained.</li> </ul> <p><u>and</u></p> <p>3. <u>Any</u> of the following:</p> <ul style="list-style-type: none"> <li>a. A change in reactor power greater than <math>\pm 10\%</math>.</li> <li>b. Safety injection initiation.</li> </ul> <p><u>and</u></p> <p>4. Compensatory plant parameters monitored via the plant computer, per OTO-RK-00001, are not valid or cannot be obtained.</p>

**Table 4-1  
EMERGENCY ACTION LEVELS**

**Group 4 SYSTEM MALFUNCTIONS**

Electrical Events (Operating)					Electrical Events (Shutdown)		
<u>UNUSUAL EVENT</u>	<u>ALERT</u>	<u>SITE EMERGENCY</u>	<u>SITE EMERGENCY</u>	<u>GENERAL EMERGENCY</u>	<u>UNUSUAL EVENT</u>	<u>UNUSUAL EVENT</u>	<u>ALERT</u>
D. Loss of All Offsite Power to Essential Busses for Greater Than 15 Minutes.  MODES: 1-4	E. Only One AC Source to Essential Busses for >15 Minutes Such That Any Additional Single Failure Would Result in Station Blackout.  MODES: 1-4	F. Loss of All Offsite Power and Loss of All Onsite AC Power to Essential Busses.  MODES: 1-4	G. Loss of All Vital DC Power  MODES: 1-4	H. Prolonged Loss of All Offsite Power and Prolonged Loss of All Onsite AC Power.  MODES: 1-4	I. Loss of Required DC Power During Cold Shutdown or Refueling Mode for Greater Than 15 Minutes.  MODES: 5, 6	J. Loss of All Offsite Power to Essential Busses for Greater Than 15 Minutes.  MODES: 5,6	K. Loss of All Offsite Power and Loss of All Onsite AC Power to Essential Busses During Cold Shutdown or Refueling.  MODES: 5, 6, Defueled
<b>Indicators</b> <u>All</u> of the following: 1. Loss of offsite power to NB01 <u>and</u> NB02. *  2. The loss of offsite power has occurred for >15 minutes.	<b>Indicators</b> 1. Loss of <u>any</u> 3 of the following power sources: a. Offsite power to NB01 * b. Offsite power to NB02 * c. Emergency Diesel NE01 d. Emergency Diesel NE02  <u>and</u> 2. The loss of <u>all</u> 3 has occurred for >15 minutes.	<b>Indicators</b> 1. Loss of <u>all</u> 4 of the following power sources: a. Offsite power to NB01 * b. Offsite power to NB02 * c. Emergency Diesel NE01 d. Emergency Diesel NE02  <u>and</u> 2. The loss of <u>all</u> 4 has occurred for >15 minutes.	<b>Indicators</b> 1. Loss (Bus Voltage < 106.9 VDC) of <u>all</u> 4 of the following busses: a. NK01 b. NK02 c. NK03 d. NK04  <u>and</u> 2. Failure to restore power to at least one DC bus within 15 minutes.	<b>Indicators</b> <u>All</u> of the following: 1. Loss of offsite power to NB01 <u>and</u> NB02. * 2. Loss of both Emergency Diesel Generators NE01 <u>and</u> NE02. 3. a. Restoration of at least one emergency bus within 4 hours is <u>not</u> likely.  <u>or</u> b. Meet the entry requirements for FRC.1, Red Path for Core Cooling.	<b>Indicators</b> 1. Loss of Division 1 Vital DC power as indicated by <106.9 VDC on NK01 <u>or</u> NK03. <u>and</u> Loss of Division 2 Vital DC power as indicated by <106.9 VDC NK02 <u>or</u> NK04.  <u>and</u> 2. The loss of <u>both</u> Divisions has occurred for >15 minutes.	<b>Indicators</b> 1. Loss of offsite power to NB01 <u>and</u> NB02. *  <u>and</u> 2. The loss of offsite power has occurred for >15 minutes.	<b>Indicators</b> 1. Loss of <u>all</u> 4 of the following power sources: a. Offsite power to NB01 * b. Offsite power to NB02 * c. Emergency Diesel NE01 d. Emergency Diesel NE02  <u>and</u> 2. The loss of <u>all</u> 4 has occurred for >15 minutes.

\* Note: Supply Breakers opening due to degraded switchyard voltage is considered a Loss of Offsite Power.

**Table 4-1**  
**EMERGENCY ACTION LEVELS**

**Group 4 SYSTEM MALFUNCTIONS**

**Shutdown Capability**

<u>UNUSUAL EVENT</u>	<u>ALERT</u>	<u>SITE EMERGENCY</u>	<u>SITE EMERGENCY</u>
<p>L.* Inability to Perform a Required Shutdown Within Technical Specification Limits.</p> <p>MODES: 1-4</p> <p><b>Indicators</b></p> <p>1. The plant is not brought to a required operating mode within a Technical Specification LCO action completion time.</p>	<p>M. Inability to Maintain Plant in Cold Shutdown.</p> <p>MODES: 5, 6</p> <p><b>Indicators</b></p> <p>1. <u>Any</u> of the following:</p> <ol style="list-style-type: none"> <li>Complete loss of both trains of RHR.</li> <li>Complete loss of both trains of CCW.</li> <li>Complete loss of both trains of ESW.</li> </ol> <p><u>and</u></p> <p>2. <u>Either</u> of the following:</p> <ol style="list-style-type: none"> <li>Greater than 200°F on <u>any</u> valid incore thermocouple.*</li> <li>Uncontrolled temperature rise, with no actions available that will likely prevent approaching 200°F on <u>any</u> valid incore thermocouple.*</li> </ol> <p>* If a thermocouple is not available, use Wide Range Hot Leg temperature indications:</p> <ul style="list-style-type: none"> <li>• BBTI413A - Loop 1</li> <li>• BBTI423A - Loop 2</li> <li>• RECORDERS</li> <li>• BBTR413 - Loop 1</li> <li>• BBTR423 - Loop 2</li> <li>• BBTR433 - Loop 3</li> <li>• BBTR443 - Loop 4</li> </ul>	<p>N. Loss of Water Level That Has or Will Uncover Fuel in the Reactor Vessel.</p> <p>MODES: 5, 6</p> <p><b>Indicators</b></p> <p>1. <u>Any</u> of the following:</p> <ol style="list-style-type: none"> <li>Complete loss of both trains of RHR.</li> <li>Complete loss of both trains of CCW.</li> <li>Complete loss of both trains of ESW.</li> </ol> <p><u>and</u></p> <p>2. <u>Either</u> of the following:</p> <ol style="list-style-type: none"> <li>Greater than 200°F on <u>any</u> valid incore thermocouple.*</li> <li>Uncontrolled temperature rise, with no actions available that will likely prevent approaching 200°F on <u>any</u> valid incore thermocouple.*</li> </ol> <p><u>and</u></p> <p>3. <ol style="list-style-type: none"> <li>Water level in the reactor vessel is less than 2.0 inches on BB-LI-0053A or B.</li> </ol></p> <p><u>or</u></p> <p>b. RVLIS (pumps off) &lt;55%</p> <p>* If a thermocouple is not available, use Wide Range Hot Leg temperature indications:</p> <ul style="list-style-type: none"> <li>• BBTI413A - Loop 1</li> <li>• BBTI423A - Loop 2</li> <li>• RECORDERS</li> <li>• BBTR413 - Loop 1</li> <li>• BBTR423 - Loop 2</li> <li>• BBTR433 - Loop 3</li> <li>• BBTR443 - Loop 4</li> </ul>	<p>O. Complete Loss of Function Needed to Achieve or Maintain Hot Shutdown.</p> <p>MODES: 1-4</p> <p><b>Indicators</b></p> <p>1. <u>All</u> of the following:</p> <ol style="list-style-type: none"> <li>Failure to bring the reactor subcritical with the control rods fully inserted.</li> <li>Complete loss of all Boron Injection Flowpaths.</li> </ol> <p><u>or</u></p> <p>2. <u>All</u> of the following:</p> <ol style="list-style-type: none"> <li>All steam generator levels &lt;10% wide range.</li> <li>All steam dump valves to condenser (AB UV-34, 35 and 36) are NOT responding to steam header pressure controller (AB PK-507 or AB UK-33).</li> <li>All steam generator steam dump valves to atmosphere are NOT operating properly (AB-PIC-1A, 2A, 3A and 4A).</li> <li>Complete loss of both RHR trains. (A complete loss of ESW or CCW constitutes a complete loss of RHR.)</li> </ol> <p><u>or</u></p> <p>3. All of the following:</p> <ol style="list-style-type: none"> <li>The Ultimate Heat Sink (UHS) is inoperable as a result of level or temperature.</li> <li>Complete loss of both UHS Cooling Tower trains.</li> </ol>
<p>* It is not intended to declare an Unusual Event due to an unknown condition or failure resulting in exceeding the allowable action statement time. The allowable action statement time is always available from the time of the discovery.</p>			

**Table 4-1**  
**EMERGENCY ACTION LEVELS**

**Group 4 SYSTEM MALFUNCTIONS**

**Communication Events**

**RCS/Fuel Events**

**Reactor Protection System**

<b><u>UNUSUAL EVENT</u></b>	<b><u>UNUSUAL EVENT</u></b>	<b><u>UNUSUAL EVENT</u></b>	<b><u>ALERT</u></b>	<b><u>SITE EMERGENCY</u></b>	<b><u>GENERAL EMERGENCY</u></b>
<p>P. Unplanned Loss of All Onsite or Offsite Communication Capabilities</p> <p>MODES: 1-6</p>	<p>Q. Fuel Clad Degradation</p> <p>MODES: 1-6</p>	<p>R. RCS Leakage</p> <p>MODES: 1-4</p>	<p>S. Failure of Reactor Protection System Instrumentation to Complete or Initiate an Automatic Reactor Trip Once a Reactor Protection System Setpoint Has Been Exceeded and Manual Trip Was Successful.</p> <p>MODES: 1, 2</p>	<p>T. Failure of Reactor Protection System Instrumentation to Complete or Initiate an Automatic Reactor Trip Once a Reactor Protection System Setpoint Has Been Exceeded and Manual Trip Was <b><u>NOT</u></b> Successful.</p> <p>MODES: 1, 2</p>	<p>U. Failure of the Reactor Protection System to Complete an Automatic Trip and Manual Trip Was <b><u>NOT</u></b> Successful and There Is Indication of an Extreme Challenge to the Ability to Cool the Core.</p> <p>MODES: 1, 2</p>
<p><b><u>Indicators</u></b></p> <p>1. <u>All</u> of the following on-site systems:</p> <ul style="list-style-type: none"> <li>a. Complete failure of Plant telephone systems</li> <li>b. Complete failure of Gai-tronics systems</li> <li>c. Complete failure of Plant radios</li> <li>d. Complete failure of Plant Emergency Dedicated Phones.</li> </ul> <p>or</p> <p>2. <u>All</u> of the following offsite systems:</p> <ul style="list-style-type: none"> <li>a. Complete failure of ENS (Red Phone) line.</li> <li>b. Complete failure of Back Up Radio System (BURS).</li> <li>c. Complete failure of Plant telephone system.</li> <li>d. Complete failure of the Sheriff's radio system.</li> <li>e. Complete failure of the SENTRY notification system.</li> </ul>	<p><b><u>Indicators</u></b></p> <p>1. <u>Any</u> of the following:</p> <ul style="list-style-type: none"> <li>a. &gt;1.0 <math>\mu</math>Ci/gram Dose Equivalent I-131 for greater than a 48 hour continuous period.</li> <li>b. Dose Equivalent I-131 activity exceeding the limits of Tech Spec Fig. 3.4-1. (ITS Fig. 3.4.16-1)</li> <li>c. &gt;100/E bar <math>\mu</math> Ci/gram of gross radioactivity.</li> </ul>	<p><b><u>Indicators</u></b></p> <p>1. <u>Any</u> of the following:</p> <ul style="list-style-type: none"> <li>a. Unidentified leakage greater than 10 gpm.</li> <li>b. Pressure boundary leakage greater than 10 gpm.</li> <li>c. Identified leakage greater than 25 gpm.</li> </ul>	<p><b><u>Indicators</u></b></p> <p>1. <u>All</u> of the following:</p> <ul style="list-style-type: none"> <li>a. An automatic (not manual) reactor trip setpoint has been exceeded as listed in Attachment 1 of E-0.</li> <li>b. An automatic reactor trip is <b><u>NOT</u></b> successful.</li> <li>c. A manual reactor trip <b><u>IS</u></b> successful using manual trip switches SB-HS-1 on RL003 <u>OR</u> SB-HS-42 on RL006.</li> </ul>	<p><b><u>Indicators</u></b></p> <p>1. <u>All</u> of the following:</p> <ul style="list-style-type: none"> <li>a. An automatic (not manual) reactor trip setpoint has been exceeded as listed in Attachment 1 of E-0.</li> <li>b. An automatic reactor trip is <b><u>NOT</u></b> successful.</li> <li>c. A manual reactor trip is <b><u>NOT</u></b> successful using manual trip switches SB-HS-1 on RL003 <u>AND</u> SB-HS-42 on RL006.</li> </ul>	<p><b><u>Indicators</u></b></p> <p>1. <u>All</u> of the following:</p> <ul style="list-style-type: none"> <li>a. An automatic (not manual) reactor trip setpoint has been exceeded as listed in Attachment 1 of E-0.</li> <li>b. An automatic reactor trip is <b><u>NOT</u></b> successful.</li> <li>c. A manual reactor trip is <b><u>NOT</u></b> successful using manual trip switches SB-HS-1 on RL003 <u>AND</u> SB-HS-42 on RL006.</li> <li>d. Meet the entry requirements for <u>FRC.1 OR</u> FRH.1, red path summaries for core cooling and heat sink.</li> </ul>