

Kewaunee Nuclear Power Plant N490, State Highway 42 Kewaunee, WI 54216-9511 920-388-2560



Operated by Nuclear Management Company, LLC

September 18, 2001

10 CFR 50, App. E

U. S. Nuclear Regulatory Commission Attention: Document Control Desk Washington, D.C. 20555

Ladies/Gentlemen:

DOCKET 50-305
OPERATING LICENSE DPR-43
KEWAUNEE NUCLEAR POWER PLANT
RADIOLOGICAL EMERGENCY RESPONSE PLAN IMPLEMENTING PROCEDURES

Pursuant to 10 CFR 50 Appendix E, attached is the latest revisions to the Kewaunee Nuclear Power Plant Radiological Emergency Response Plan Implementing Procedures (EPIPs). These revised procedures supersede the previously submitted procedures.

Pursuant to 10 CFR 50.4, two additional copies of this letter and attachment are hereby submitted to the Regional Administrator, U. S. Nuclear Regulatory Commission, Region III, Lisle, Illinois. As required, one copy of this letter and attachment is also submitted to the Kewaunee Nuclear Power Plant NRC Senior Resident Inspector.

Sincerely,

Thomas J. Webb / Site Licensing Director

SLC

Attachment

cc - US NRC Senior Resident Inspector, w/attach.
US NRC, Region III (2 copies), w/attach.
Electric Division, PSCW, w/o attach.
OA Vault, w/attach.

A045

**September 18, 2001** 

#### **EMERGENCY PLAN IMPLEMENTING PROCEDURES TRANSMITTAL FORM**

#### **RETURN TO DIANE FENCL - KNPP**

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W. Galarneau - SBF/EMT (54)

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W. Galarneau - RAF/RPO (106, 107)

W. Galarneau - SBF/ENV (108, 109)

W. Galarneau - SBF/EM Team (110, 111, 111A)

W. Galarneau - Aurora Medical Center (118, 119)

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N. Deda - SBF/SEC (114)

D. Krall - CR/Communicator (116)(Partial Distribution)

Simulator/Communicator (117)

J. Fletcher - Security (121)

N. Deda - Security Building (120)

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J. Stoeger (126)

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Please follow the directions when updating your EPIP Manual. WATCH FOR DELETIONS!!! These are controlled procedures and random checks may be made to ensure the manuals are kept up-to-date.

\*THIS IS NOT A CONTROLLED COPY. IT IS A COPY FOR INFORMATION ONLY.

#### KEWAUNEE NUCLEAR POWER PLANT REVISION OF EMERGENCY PLAN IMPLEMENTING PROCEDURES September 18, 2001

Please follow the directions listed below. If you have any questions regarding changes made to the EPIPs, please contact Dave Seebart at ext. 8719. If you are a controlled copy holder (see cover page), return this page to Diane Fencl by October 18, 2001, SIGNED AND DATED to serve as a record of revision.

#### EPIP Index, dated 09-18-2001.

| REMOVE     |      | INSERT     |      |
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| EPIP-AD-02 | AA   | EPIP-AD-02 | AB   |

| I CERTIFY Copy No<br>Kewaunee Nuclear Power P<br>updated. |             |
|---|-------------|
| SIGNATURE   | DATE        |
| Please return this sheet to D                             | IANE FENCL. |

Diane Fencl

**Enclosure** 

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| EP-RET     |  |             |            |  |  |  |
| RET-02A-02 | Emergency Sample Worksheet   | Е           | 06-05-2001 |  |  |  |
| RET 2B.1   | Containment Stack Release (Grab Sample)                            | С           | 04-16-96   |  |  |  |
| RET 2B.2   | Auxiliary Building Stack (Grab Sample)                             | С           | 04-16-96   |  |  |  |
| RET 2B.3   | Auxiliary Building Stack (Sping Reading)                           | С           | 04-16-96   |  |  |  |
| RET 2B.4   | Containment Stack (Sping Reading)                                  | В           | 04-16-96   |  |  |  |
| RET 2B.5   | Steam Release  | С           | 04-16-96   |  |  |  |
| RET 2B.6   | Field Reading (Grab Sample)  | A           | 04-16-96   |  |  |  |
| RET-04-01  | SAM-2 Counting Equipment Worksheet                                 | Е           | 06-12-2001 |  |  |  |
| RET 8.3    | Hospital Survey 1  | Deleted     | 06-05-2001 |  |  |  |
| RET 8.4    | Hospital Survey 2  | Deleted     | 07-25-97   |  |  |  |
| RET 8.5    | Hospital Survey 3  | Deleted     | 07-25-97   |  |  |  |
| RET-08-06  | Hospital Survey 4  | F           | 06-15-2000 |  |  |  |
| RET 9      | Environmental TLD Record Sheet                                     | С           | 02-14-95   |  |  |  |
|            | EP-SEC   | <del></del> |            |  |  |  |
| SEC-03.01  | Emergency Accountability Log                                       | Α           | 03-28-2000 |  |  |  |
| SEC 4.1    | Emergency Dosimeter Log  | F           | 02-16-2000 |  |  |  |
|            | EP-TSC   |             |            |  |  |  |
| TSC 1.1    | Plant Status Summary for SAM Implementation                        | A           | 04-01-99   |  |  |  |
| TSC 1.2    | Severe Accident Management Summary and Strategy<br>Recommendation  | A           | 04-01-99   |  |  |  |
| TSC 1.3    | Severe Accident Management - Status                                | A           | 04-01-99   |  |  |  |
| TSC 2.1    | TSC and OSF Activation Checklist                                   | N           | 04-01-99   |  |  |  |
| TSC 2.2    | TSC Ventilation Checklist  | Н           | 04-01-99   |  |  |  |
| TSC-02-03  | Emergency Response Data System (ERDS) Link Initiation<br>Checklist | G           | 05-04-2001 |  |  |  |

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DATE: 09-18-2001 FORM EPIPF TITLE REV. DATE TSC-02-04 TSC Chart Recorder Operation Checklist D 01-30-2001 **TSC 2.5** TSC and OSF De-activation Checklist ORIG 04-01-99 TSC-03-01 Plant System Status L 06-12-2001 TSC-03-02 Plant Equipment Status L 06-12-2001 TSC-03-03 Environmental Status Board J 06-12-2001 TSC-03-04 **Radiation Monitors** Η 06-12-2001 TSC-04-01 **Emergency Physical Change Request** F 08-29-2000 TSC-04-02 Emergency Physical Change Safety Review F 08-29-2000 TSC-04-03 **Emergency Physical Change Index** F 08-29-2000 TSC-07-01 Head Venting Calculation F 10-31-2000 **TSC 8A.1** Steam Release Data Sheet (Energy Balance) G 02-14-95 **TSC 8A.2** Steam Release Calculation Sheet (Energy Balance) F 02-14-95 **TSC 8A.3** Steam Release Data/Calculation Sheet (Open Valve) D 02-14-95 **TSC 8A.4** Steam Release Data/Calculation Sheet (STMRLS C 04-16-96 Program) TSC 9A.1 Core Damage Based on Reactor Vessel Level & Fuel Rod C 02-14-95 **TSC 9A.2** Core Damage Based on Radiation Monitors C 02-14-95 **TSC 9A.3** Cs-134 and Cs-137 PCF Determination D 04-16-96 **TSC 9A.4** Core Damage Based on Activity Ratios C 02-14-95 **TSC 9A.5** Core Damage Assessment (Monitoring Data) D 04-16-96

C

02-14-95

**TSC 9A.6** 

Core Damage Summary

| WISCONSIN PUBLIC SERVICE CORP.        | No.      | EPIP-AD-02           | Rev. AB      |
|---------------------------------------|----------|----------------------|--------------|
| WISCONSIN PUBLIC SERVICE COM .        |          | Emergency Class Dete | ermination   |
| Kewaunee Nuclear Power Plant          |          |                      |              |
| Dungadura                             | Date     | SEP 1 8 2001         | Page 1 of 20 |
| Emergency Plan Implementing Procedure | Approve  | ad By                | ula          |
| Reviewed By War PORC Review           | [Дрргоче | ☑ Yes   SRO Approva  | □ No         |
| Safety No Required                    |          | □ No Changes Req     | uireu        |

### 1.0 Purpose

1.1 This procedure provides instruction for determining proper emergency classification listed in order to activate the appropriate level of response from the Kewaunee Nuclear Power Plant emergency response organization and off-site response organization.

### 2.0 General Notes

2.1 None

## 3.0 Precautions and Limitations

Plant monitors used to determine whether emergency classification levels are being exceeded should be checked for accuracy prior to declaring an emergency class (e.g., compare against redundant channels, determine if consistent with system status, or verification by sample analysis when required by Chart A(1).

#### 4.0 Initial Conditions

4.1 This procedure applies during any plant evolution that may result in an emergency declaration.

#### 5.0 Procedure

- 5.1 Determine if a plant emergency exists during abnormal plant conditions by referring to Chart 1, Emergency Action Level Charts.
- 5.2 <u>IF</u> a plant emergency exists, <u>THEN</u> perform the required actions of the appropriate emergency procedure listed below:
  - 5.2.1 EPIP-AD-03, KNPP Response to an Unusual Event
  - 5.2.2 EPIP-AD-04, KNPP Response to Alert or Higher
- 5.3 As plant conditions change, continue referring to the Emergency Action Level Charts.
- 5.4 Determine if the emergency should be reclassified.
- 5.5 <u>IF</u> the event is reclassified, <u>THEN</u> return to step 5.2.

| WISCONSIN PUBLIC SERVICE CORP.        | No.   | EPIP-AD-02                    | Rev. AB      |
|---------------------------------------|-------|-------------------------------|--------------|
| Kewaunee Nuclear Power Plant          | Title | Emergency Class Determination |              |
| Emergency Plan Implementing Procedure | Date  | SEP 1 8 2001                  | Page 2 of 20 |

- 5.6 <u>IF</u> Final Conditions (Section 6.0) are not met, <u>THEN</u> return to step 5.3.
- 5.7 <u>IF</u> Final Conditions (Section 6.0) are met, <u>THEN</u> use of this procedure may be suspended.

#### 6.0 Final Conditions

Plant Emergency has been Terminated or Recovery actions have begun and the Responsible Director has suspended the use of EPIPs.

#### 7.0 References

- 7.1 Kewaunee Nuclear Power Plant Emergency Plan
- 7.2 EPIP-AD-01, Personnel Response to the Plant Emergency Siren
- 7.3 EPIP-AD-03, KNPP Response to an Unusual Event
- 7.4 EPIP-AD-04, KNPP Response to Alert or Higher
- 7.5 COMTRAK 89-001, NRC Inspection Report 88-11, Improve Guidance for Fires Chart G
- 7.6 OEA 87-246, Report OE 2265, Improve Description of Unusual Aircraft Activity Chart P
- 7.7 NRC Letter 07-11-94, Branch Position on Acceptable Deviations to NUREG-0654

#### 8.0 Records

- The following QA records and non-QA records are identified in this directive/procedure and are listed on the KNPP Records Retention Schedule. These records shall be maintained according to the KNPP Records Management Program.
  - 8.1.1 QA Records

None

8.1.2 Non-QA Records

None

## **EMERGENCY ACTION LEVEL CHARTS**

The following charts are separated into different abnormal operating conditions which may, depending upon their severity, be classified as an Unusual Event, Alert, Site Emergency, or General Emergency.

|   | CHART | PAGE  |
|---|-------|-------|
| Abnormal Radiological Effluent          | A (1) | 4     |
| Gaseous Effluent Action Levels          | A (2) | 5 – 7 |
| Fuel Damage Indication                  | В     | 8     |
| Primary Leak to LOCA                    | С     | 9     |
| Primary to Secondary Leak               | D     | 10    |
| Loss of Power                           | Е     | 11    |
| Engineered Safety Feature Anomaly       | F     | 12    |
| Loss of Indication                      | G     | 13    |
| DELETED                                 | Н     | 13    |
| Secondary Side Anomaly                  | I     | 14    |
| Miscellaneous Abnormal Plant Conditions | J     | 15    |
| Fire and Fire Protection                | K     | 16    |
| DELETED                                 | L     | 16    |
| Earthquake                              | M     | 17    |
| High Winds or Tornado                   | N     | 17    |
| Flood, Low Water, or Seiche             | 0     | 18    |
| External Events and Chemical Spills     | P     | 19    |
| Security Contingency                    | Q     | 20    |

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# CHART A(1) ABNORMAL RADIOLOGICAL EFFLUENT

| KNPP INDICATION  | EMERGENCY CLASSIFICATION<br>CRITERIA   | CLASSIFICATION       |
|--|--|----------------------|
| SEE CHART A(2)   | Effluent monitors detect levels corresponding to greater than 1 rem/hr whole body or 5 rem/hr thyroid at the site boundary under "actual meteorological" conditions.   | GENERAL<br>EMERGENCY |
| Projected or measured dose rates to be provided<br>by the Radiological Protection Director or<br>Environmental Monitoring Teams.   | Projected or measured in the environs dose rates greater than 1 rem/hr whole body or 5 rem/hr thyroid at the site boundary.  | GENERAL<br>EMERGENCY |
| SEE CHART A(2)   | Effluent monitors detect levels corresponding to greater than 50 mr/hr for ½ hour OR greater than 500 mr/hr for two minutes (or five times these levels to the thyroid) OR for "adverse meteorology."  | SITE EMERGENCY       |
| Projected or measured dose rates to be provide by the Radiological Protection Director or Environmental Monitoring Teams.  | At the site boundary, projected or measured dose rates greater than 50 mr/hr for ½ hours OR greater than 500 mr/hr for two minutes (or five times these levels to the thyroid) or EPA PAGs are projected to be exceeded outside the site boundary. | SITE EMERGENCY       |
| SEE CHART A(2)   | Radiological effluents greater than 10 times ODCM instantaneous limits.  | ALERT                |
| <ul> <li>a. Containment R-2 OR R-7 ≥ 1.0E+4 mr/hr OR</li> <li>b. Charging Area R-4 ≥ 1.0E+4 mr/hr, OR</li> <li>c. SFP Area R-5 ≥ 1.0E+4 mr/hr, OR</li> <li>d. Plant area air sample indicates airborne contamination &gt; 1000 times the occupational DAC values.</li> </ul> | Radiation levels or airborne contamination which indicate a severe degradation in the control of radioactive materials (e.g., radiation levels suddenly increase by a factor of 1000).   | ALERT                |
| <ol> <li>Gaseous Releases: See Chart A(2)</li> <li>Liquid Releases: Notification by the Rad-<br/>Chem Group of violating ODCM 3.3.1<br/>limits.</li> </ol>   | Off site Dose Calculation Manual limits exceeded.  | UNUSUAL EVENT        |

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## CHART A(2) GASEOUS EFFLUENT ACTION LEVELS

#### 1. AUX BUILDING VENT RELEASES - <u>WITH SIGNIFICANT CORE DAMAGE</u>

Instrument readings assuming a post accident gas release AND Containment High Range Radiation Monitors 42599 (R-40) and 42600 (R-41) reads 1000 R/hr within one-half hour of the accident.

NOTE: Use adverse meteorology conditions (ADV MET) only when, 10m and 60m wind speed < 5mph AND

Delta-T > 2.4 degrees F. All other cases are average meteorology (AVG MET).

NOTE: R-13 and R-14 are expected to be off scale high during all events on this page.

| SV & SFP<br>FANS           | AU      | AUX BLDG SPING MONITORS      |         |                              | AU         | X BLDG ST   | ACK MONI                              | TORS      | EMERG.<br>CLASS. |
|----------------------------|---------|------------------------------|---------|------------------------------|------------|-------------|---------------------------------------|-----------|------------------|
|                            | CPM     | RANGE<br>(01-07)<br>Г G9086G | CPM     | RANGE<br>(01-09)<br>Γ G9088G |            | -35<br>V/HR |                                       | -36<br>HR |                  |
| TOTAL<br>NUMBER<br>RUNNING | AVG MET | ADV MET                      | AVG MET | ADV MET                      | AVG<br>MET | ADV<br>MET  | AVG MET                               | ADV MET   |                  |
| 1                          | **      | 1.1E+4                       | 6.5E+1  | *                            | **         | 7.9E+2      | 1.27E+2                               | 7.9E-1    |                  |
| 2                          | 8.8E+5  | 5.5E+3                       | 3.25E+1 | *                            | **         | 3.9E+2      | 6.35E+1                               | 4.0E-1    | GENERAL          |
| 3                          | 5.9E+5  | 3.7E+3                       | 2.16E+1 | *                            | **         | 2.6E+2      | 4.2E+1                                | 2.6E-1    | EMERG.           |
| 4                          | 4.4E+5  | 2.7E+3                       | 1.62E+1 | *                            | **         | 2.0E+2      | 3.175E+1                              | 2.0E-1    |                  |
|                            |         |                              |         |                              |            |             |                                       |           |                  |
| 1                          | 8.8E+4  | 5.5E+2                       | 3.0E+0  | *                            | 6.3E+3     | 3.9E+1      | 6.3E+0                                | *         |                  |
| 2                          | 4.4E+4  | 2.7E+2                       | 1.5E+0  | *                            | 3.1E+3     | 1.9E+1      | 3.1E+0                                | *         | SITE             |
| 3                          | 2.9E+4  | 1.8E+2                       | 1.0E+0  | *                            | 2.1E+3     | 1.3E+1      | 2.1E+0                                | *         | EMERG.           |
| 4                          | 2.2E+4  | 1.3E+2                       | *       | *                            | 1.5E+3     | 9.5E+0      | 1.5E+0                                | *         |                  |
|                            |         |                              |         |                              |            |             |                                       |           |                  |
| 1                          | 1.0E+3  | 6.2E+0                       | *       | *                            | 7.0E+1     | *           | *                                     | *         |                  |
| 2                          | 5.0E+2  | 3.1E+0                       | *       | *                            | 3.5E+1     | *           | *                                     | *         |                  |
| 3                          | 3.3E+2  | 2.0E+0                       | *       | *                            | 2.3E+1     | *           | *                                     | *         | ALERT            |
| 4                          | 2.5E+2  | 1.5E+0                       | *       | *                            | 1.75E+1    | *           | *                                     | *         |                  |
|                            |         |                              |         |                              |            |             | · · · · · · · · · · · · · · · · · · · |           |                  |
| 1                          | 1.0E+2  | 6.2E-1                       | *       | *                            | 7.0E+0     | *           | *                                     | *         |                  |
| 2                          | 5.0E+1  | 3.1E-1                       | *       | *                            | 3.5E+0     | *           | *                                     | *         | UNUSUAL          |
| 3                          | 3.3E+1  | 2.0E-1                       | *       | *                            | 2.3E+0     | *           | *                                     | *         | EVENT            |
| 4                          | 2.5E+1  | 1.5E-1                       | *       | •                            | 1.7E+0     | *           | *                                     | *         |                  |

<sup>\*</sup> Offscale Low

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<sup>\*\*</sup> Offscale High (Confirmation Only)

## CHART A(2) GASEOUS EFFLUENT ACTION LEVELS continued

#### 2. AUX BUILDING VENT RELEASES WITHOUT CORE DAMAGE

NOTE: Use adverse meteorology conditions (ADV MET) only when, 10m and 60m wind speed < 5mph

AND Delta-T > 2.4 degrees F. All other cases are average meteorology (AVG MET).

NOTE: R-13 and R-14 are expected to be off scale high during all events on this page.

| SV & SFP<br>FANS           | AUX BLDG SPING MONITORS |                              |   |         | EMERG.<br>CLASS. |  |
|----------------------------|-------------------------|------------------------------|---|---------|------------------|--|
| TOTAL<br>NUMBER<br>RUNNING | CPM                     | RANGE<br>(01-07)<br>T G9086G | HIGH RANGE<br>CPM (01-09)<br>PPCS PT G9088G |         |                  |  |
|                            | AVG MET                 | ADV MET                      | AVG MET                                     | ADV MET |                  |  |
| 1                          | **                      | 9.4E+4                       | 1.6E+4                                      | 1.0E+2  |                  |  |
| 2                          | **                      | 4.7E+4                       | 8.0E+3                                      | 5.0E+1  | GENERAL          |  |
| 3                          | **                      | 3.1E+4                       | 5.3E+3                                      | 3.3E+1  | EMERG.           |  |
| 4                          | **                      | 2.3E+4                       | 4.0E+3                                      | 2.5+1   |                  |  |

| 1 | 7.5E+5 | 4.6E+3 | 8.0E+2 | 5.0E+0 |        |
|---|--------|--------|--------|--------|--------|
| 2 | 3.7E+5 | 2.3E+3 | 4.0E+2 | 2.5E+0 | SITE   |
| 3 | 2.5E+5 | 1.5+3  | 2.6E+2 | 1.6E+0 | EMERG. |
| 4 | 1.8E+5 | 1.1E+3 | 2.0E+2 | 1.2E+0 |        |

| SV & SFP                           | AUX BLDG SP                                  |   |                  |
|------------------------------------|--|---|------------------|
| FANS<br>TOTAL<br>NUMBER<br>RUNNING | LOW RANGE<br>Ci/cc (01-05)<br>PPCS PT G9084G | MID RANGE<br>CPM (01-07)<br>PPCS PT 9086G | EMERG.<br>CLASS. |
| 1                                  | **   | 8.6E+3                                    |                  |
| 2                                  | **   | 4.3E+3                                    | ALERT            |
| 3                                  | **   | 2.8E+3                                    | ALERI            |
| 4                                  | **   | 2.1E+3                                    |                  |

| 1 | 6.3E-2 | 8.6E+2 |         |
|---|--------|--------|---------|
| 2 | 3.1E-2 | 4.3E+2 | UNUSUAL |
| 3 | 2.1E-2 | 2.8E+2 | EVENT   |
| 4 | 1.5E-2 | 2.1E+2 |         |

<sup>\*\*</sup> Offscale High (Confirmation Only)

# CHART A(2) GASEOUS EFFLUENT ACTION LEVELS continued

### 3. STEAM LINE RELEASE <u>WITH SIGNIFICANT CORE DAMAGE</u>

Instrument readings assuming radioactive steam is releasing at a total of 1.4E+5 pounds per hour to the atmosphere AND Containment High Range Radiation Monitor 42599 (R-40) or 42600 (R-41) reads 1000 R/hr within one-half hour of the accident.

|               | "A"<br>Steam Line Monitors |                | "B"<br>Steam Line Monitors |                | Emergency Classification |
|---------------|----------------------------|----------------|----------------------------|----------------|--------------------------|
| R-15<br>(cpm) | R-31<br>(mR/hr)            | R-32<br>(R/hr) | R-33<br>(mR/hr)            | R-34<br>(R/hr) |                          |
| **            | 1.3E+3                     | E+0            | 1.3E+03                    | E+0            | General Emergency        |
| **            | 6.0E+1                     |                | 6.0E+1                     |                | Site Emergency           |
| **            | 1.5E-1                     |                | 1.5E-1                     |                | Alert                    |
| 2.0E+05       |                            |                |                            |                | Unusual Event            |

<sup>\*\*</sup> Offscale High (Confirmation Only)

#### 4. SHIELD BUILDING STACK RELEASE

Instrument readings assuming SBV System is operating in the recirculation mode.

| Reactor Bldg. Disc                           | harge Vent SPING                              | Emergency Classification |
|--|---|--------------------------|
| PPCS PT G9077G<br>(02-07)<br>Mid Range (cpm) | PPCS PT G9079G<br>(02-09)<br>High Range (cpm) |                          |
| 1.3E+05                                      | 1.5E+2  | General Emergency        |
| 6.7E+03                                      | 7.0E+0  | Site Emergency           |
| 1.5E+1                                       |   | Alert                    |
|  |   | Unusual Event            |

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# CHART B FUEL DAMAGE INDICATION

| KNPP INDICATION  |  | EMERGENCY<br>CLASSIFICATION<br>CRITERIA   | CLASSIFICATION       |
|--|--|---|----------------------|
| SACRG-1, Severe Accident<br>Initial Response has been im                                     | Control Room Guideline plemented.            | Plant conditions exist that make the release of large amounts of radioactivity in a short time period possible. | GENERAL<br>EMERGENCY |
| (Applies when more than on damaged.)   | e spent fuel element is                      | Major damage to spent fuel in containment or auxiliary building.  | SITE<br>EMERGENCY    |
| (1) Fuel Handling accident   | t in Containment                             |   |                      |
| Report of a large objec dropped spent fuel asse  | t dropped in Rx core OR<br>embly, <u>AND</u> |   |                      |
| Alarm on R-11 OR R-1   | 12   |   |                      |
| (2) Fuel Handling Acciden  | nt in Auxiliary Bldg.                        |   |                      |
| Report of: a. A large object drop  | ped in spent fuel pool, <u>OR</u>            |   |                      |
| b. A dropped spent fue   | el assembly, <u>OR</u>                       |   |                      |
| c. A loss of water leve<br>Alarm on R-13 or R  | el below spent fuel, <u>AND</u><br>R-14.     |   |                      |
| R-9 indication is offscale hig   | gh, <u>AND</u>                               | Severe loss of fuel cladding  | ALERT                |
| Laboratory analysis confirms RCS activity levels comparable to USAR Appendix D, Table D.4-1. |  | Very high coolant activity sample   |                      |
|  |  | b. Failed fuel monitor indicates greater than 1% fuel failures within 30 minutes or 5% total fuel failures.     |                      |
| (1) Fuel Handling Accident in Containment  |  | Fuel damage accident with release of radioactivity to containment or  | ALERT                |
| A confirming report,   | <u>AND</u>                                   | of radioactivity to containment or auxiliary building.  |                      |
| Alarm on R-11 OR R   | -12  |   |                      |
| (2) Fuel Handling Accider  | nt in Auxiliary Bldg.                        |   |                      |
| A confirming report, A   | AND  |   |                      |
| Alarm on R-13 OR R-  | 14.  |   |                      |
| With RCS Temperature > 50  | 00°F,  | High reactor coolant activity sample.   | UNUSUAL<br>EVENT     |
| a. > 0.2 μCi/gram DOSE<br><u>OR</u>  | Equivalent I-131 for 48 hours,               |   |                      |
| b. Exceeding T.S. figure 1<br>I-131, <u>OR</u>   | 3.1-3 for Dose Equivalent                    |   |                      |
| c. > 91/Ē μCi/cc   |  |   |                      |
| As determined by SP-37-06.   | 5 (from T.S. 3.1.c)                          |   |                      |
| R-9 is greater than 5.0 R/hr,  | AND  | Failed fuel monitor indicates greater than 0.1% equivalent fuel failures  | UNUSUAL<br>EVENT     |
| Verified by RCS chemistry  | sample analysis.                             | within 30 minutes.  |                      |

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#### CHART C PRIMARY LEAK TO LOCA

NOTE: This chart does not apply when leakage from the Reactor Coolant System is caused by a Steam Generator tube rupture.

|  |  | KNPP INDICATION                         | EMERGENCY<br>CLASSIFICATION CRITERIA   | CLASSIFICATION       |
|--|--|---|--|----------------------|
| (1) (2)  | <ul> <li>a. SI and RHR pumps not running, <u>OR</u></li> <li>b. Verification of no flow to the reactor vessel, <u>OR</u></li> <li>c. Core exit thermocouples indicate greater than 1200°F, <u>AND</u></li> </ul> |   | <ol> <li>Loss of coolant accident, AND</li> <li>Initial or subsequent failure of ECCS, AND</li> <li>Containment failure or potential failure exists (loss of 2 of 3 fission product barriers with a potential loss of 3rd barrier).</li> </ol> | GENERAL<br>EMERGENCY |
| d. Containment pressure exceeds 46 psig.  SI System is activated and RCS leakage exceeds charging system capacity as verified by Control Room indications or IPEOPs. |  | m is activated and RCS leakage exceeds  | Reactor Coolant System leakage greater than make-up pump capacity.   | SITE<br>EMERGENCY    |
| Charging flow verses letdown flow indicates an unisolable RCS leak > 50 gpm.   |  | g flow verses letdown flow indicates an | Reactor Coolant System leak rate greater than 50 GPM.  | ALERT                |
| Tec<br>Indi<br>Rea   | Initiation of reactor shutdown required by Technical Specification, Section T.S. 3.1.d. Indicated leakage may be determined using Reactor Coolant System mass balance calculations performed by SP-36-082.       |   | Exceeding Reactor Coolant<br>System leak rate, Technical<br>Specifications, requiring reactor<br>shutdown.   | UNUSUAL<br>EVENT     |

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# CHART D PRIMARY TO SECONDARY LEAK

|                       | KNPP INDICATION   | EMERGENCY<br>CLASSIFICATION<br>CRITERIA                             | CLASSIFICATION    |
|-----------------------|---|---|-------------------|
| (1)                   | Entry into IPEOP E-3, "Steam Generator Tube Rupture," is expected or has occurred, <u>AND</u>                   | Rapid failure of steam generator tubes with loss of off-site power. | SITE<br>EMERGENCY |
| (2)                   | Primary-to-secondary flow > 800 GPM OR RCS pressure decreasing uncontrollably, <u>AND</u>                       |   |                   |
| (3)                   | All three transformers Main Aux., Reserve Aux., and Tertiary Aux., are de-energized.                            |   |                   |
| (1)                   | Entry into IPEOP E-3, "Steam Generator Tube Rupture," is expected or has occurred, AND                          | Rapid gross failure of one steam generator tube with loss of        | ALERT             |
| (2)                   | Primary-to-secondary leak rate > 400 GPM, AND   | off-site power.   | C                 |
| (3)                   | All three transformers: Main Aux., Reserve Aux., and Tertiary Aux., are de-energized.                           |   |                   |
| (1)                   | Entry into IPEOP E-3, "Steam Generator Tube Rupture," is expected or has occurred, AND                          | Rapid failure of multiple steam generator tubes.                    | ALERT             |
| (2)                   | Primary-to-secondary leak rate greater than 800 GPM indicated by SI flow <b>OR</b> RWST level change.           |   |                   |
| Prin<br>for r         | nary-to-secondary leakage > 150 gallons per day nore than 4 hours (TS 3.1.d.2).                                 | Exceeding Primary-to-Secondary leak rate Technical Specification.   | UNUSUAL<br>EVENT  |
| Do 1<br>incre<br>shut | not delay declaration if leakage suddenly eases above 150 gallons per day AND plant down actions are initiated. |   |                   |

### CHART E LOSS OF POWER

|   | EMEDCENCY   |                      |
|---|---|----------------------|
| KNPP INDICATION   | EMERGENCY<br>CLASSIFICATION<br>CRITERIA   | CLASSIFICATION       |
| (1) RCS is ≥ 350°F, <u>AND</u>  | Failure of off-site and on-site AC power, AND                                       | GENERAL<br>EMERGENCY |
| (2) Buses 1 through 6 are de-energized including the D/G supplies to buses 5 and 6, AND   | Total loss of auxiliary feedwater makeup capability for greater than 2 hours. (Loss |                      |
| (3) Loss of the turbine driven AFW pump, AND  | of power plus loss of all AFW would lead to clad failure and                        |                      |
| (4) Conditions exist for greater than 2 hours.  | potential containment failure.)   |                      |
| Buses 1 through 6 are de-energized including the D/G supplies to buses 5 and 6 for longer than 15 minutes. (Does not apply when core is unloaded or cavity is flooded with internals removed.)          | Loss of on-site AC power (for   | SITE<br>EMERGENCY    |
|   | more than 15 minutes).  |                      |
| Low voltage lockout OR de-energized condition on all safeguards DC distribution cabinets for greater than 15 minutes.   | Loss of all vital on-site DC power (for more than 15 minutes).                      | SITE<br>EMERGENCY    |
| <ul> <li>a. BRA 102 and BRB 102, <u>OR</u></li> <li>b. BRA 104 and BRB 104, <u>OR</u></li> <li>c. BRA 102 and BRB 104, <u>OR</u></li> <li>d. BRB 102 and BRA 104</li> </ul>                             |   |                      |
| (Does not apply when core is unloaded or cavity is flooded with internals removed.)   |   |                      |
| Low voltage lockout OR de-energized condition on all safeguards DC distribution cabinets for less than 15 minutes.  | Loss of all vital on-site DC power (for less than 15 minutes).                      | ALERT                |
| <ul> <li>a. BRA 102 and BRB 102, <u>OR</u></li> <li>b. BRA 104 and BRB 104, <u>OR</u></li> <li>c. BRA 102 and BRB 104, <u>OR</u></li> <li>d. BRB 102 and BRA 104</li> </ul>                             |   |                      |
| (Does not apply when core is unloaded or cavity is flooded with internals removed.)   |   |                      |
| Buses 1 through 6 are de-energized, AND   | Loss of off-site power, AND   | ALERT                |
| the D/G supplies to buses 5 and 6 do not respond as designed. AC power is restored to bus 5 or 6 within 15 minutes. (Does not apply when core is unloaded or cavity is flooded with internals removed.) | Loss of on-site AC power (for less than 15 minutes.)                                |                      |
| With the Reactor Coolant System above cold shutdown condition:  | Loss of off-site power, <u>OR</u>   | UNUSUAL<br>EVENT     |
| a. All three transformers: Main Aux., Reserve Aux., and Tertiary are de-energized, <u>OR</u>  | Loss of on-site power capability.   | _                    |
| b. Both D/Gs unavailable (unable to supply bus 5 or 6 by any means).  |   |                      |
| Core is unloaded or reactor cavity is flooded with internals removed, <u>AND</u>  | Loss of off-site power, AND   | UNUSUAL<br>EVENT     |
| Buses 1 through 6 are de-energized including the D/G supplies to buses 5 and 6 for longer than 15 minutes.  | Loss of on-site AC power (for more than 15 minutes).                                |                      |

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### CHART F ENGINEERED SAFETY FEATURE ANOMALY

| KNPP INDICATION   | EMERGENCY<br>CLASSIFICATION<br>CRITERIA  | CLASSIFICATION    |
|---|--|-------------------|
| RCS > 200°F with a loss of cooling capability or inventory control:   | Complete loss of any function needed when RCS > 200°F.   | SITE<br>EMERGENCY |
| a. Loss of negative reactivity control, <u>OR</u>   |  |                   |
| b. Steam dump, S/G safeties, and power operating reliefs not operable (> 350°F), OR   |  |                   |
| c. Inability to feed S/Gs (No AFW or Main Feedwater/Condensate Flow), <u>OR</u>   |  |                   |
| d. Loss of RCS inventory control, OR  |  |                   |
| e. (1) Loss of both trains of RHR, AND  |  |                   |
| (2) The inability to sustain either natural <b>OR</b> forced circulation with the steam generators (≤ 350°F).                                 |  |                   |
| A Site Emergency should be declared upon the initiation of bleed and feed per FR H.1, "Response to Loss of Secondary Heat Sink"               |  |                   |
| (Apply this criteria when the RCS is ≤ 200°F.)  | Complete loss of any function  | ALERT             |
| (1) Loss of both trains of RHR  | needed when RCS ≤ 200°F.   |                   |
| (Does not apply when core is unloaded <b>OR</b> cavity is flooded with internals removed.)  |  |                   |
| Failure of both Rx trip breakers to open upon receipt of a valid signal. Applies even if IPEOP FR S.1 is not entered.                         | Failure of the Reactor Protection System to initiate and complete a reactor trip which brings the reactor subcritical. | ALERT             |
| (1) Loss of ESF function, required support function or required Tech Spec instruments <b>OR</b> Exceeding Tech Spec Safety Limits, <u>AND</u> | Inability to reach required shutdown within Tech Spec limits   | UNUSUAL<br>EVENT  |
| (2) upon discovery, inability or failure to take required shutdown or mode change actions within the required time.                           |  |                   |
| NOTE: Total loss of AFW system when required (FR-H.1 implemented) should be declared a UE regardless of Tech Spec action compliance.          |  |                   |

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### CHART G LOSS OF INDICATION

| KNPP INDICATION  | EMERGENCY<br>CLASSIFICATION<br>CRITERIA  | CLASSIFICATION    |
|--|--|-------------------|
| (1) Total loss of Annunciator System computer alarms, and sequence of events recorder for greater than 15 minutes, <u>AND</u>  | Most or all alarms (annunciators) lost and a plant transient initiated or in progress.   | SITE<br>EMERGENCY |
| (2) Uncontrolled plant transient in progress or initiated during the loss.   |  |                   |
| Total loss of Annunciator System, computer alarms, and sequence of events recorder. (Not applicable when plant is at or below cold shutdown.)  | Most or all alarms (annunciators) lost.  | ALERT             |
| Significant loss of ESF or Rx Protection instrumentation. An Unusual Event should NOT be declared for a non-emergency Tech Spec backdown, when the affected parameter remains monitorable. (Not applicable when plant is at or below cold shutdown.) | Indications or alarms on process or effluent parameters not functional in control room to an extent requiring plant shutdown or other significant loss of assessment capability. | UNUSUAL<br>EVENT  |

**CHART H** 

(DELETED)

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## CHART I SECONDARY SIDE ANOMALY

| KNPP INDICATION   | EMERGENCY<br>CLASSIFICATION<br>CRITERIA   | CLASSIFICATION    |
|---|---|-------------------|
| <ol> <li>Main steam line break that results in a SI actuation, AND</li> <li>a. R-15 or R-19 reads offscale high with confirmation by chemistry analysis, OR</li> <li>b. Primary-to-secondary leakage &gt; 50 gpm, AND</li> <li>a. R-9 or CNTMT high range rad monitors (42599, 42600) indicate &gt; 10 R/hr, OR</li> <li>b. CNTMT hydrogen monitor indicates &gt; 1% hydrogen concentration.</li> </ol> | Steam line break, <u>AND</u> Primary-to-secondary leak > 50 GPM, <u>AND</u> Indication of Fuel Damage.  | SITE<br>EMERGENCY |
| Main steam line break that results in a SI actuation,  AND  a. R-15 OR R-19 reads a factor of 1000 above normal, OR  b. Primary-to-secondary leakage > 10 gpm.  | Steam line break with significant (greater than 10 GPM) primary-to-secondary leakage.  (Applies even if events occur in opposite steam generators.) | ALERT             |
| Turbine trip and observation of penetration of casing.  | Turbine rotating component failure causing rapid plant shutdown.  | UNUSUAL<br>EVENT  |
| The uncontrolled depressurization of the secondary system that results in an SI actuation.  | Rapid depressurization of the secondary side.   | UNUSUAL<br>EVENT  |

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# CHART J MISCELLANEOUS ABNORMAL PLANT CONDITIONS

|  | KNPP INDICATION   | EMERGENCY<br>CLASSIFICATION CRITERIA  | CLASSIFICATION       |
|--|---|---|----------------------|
| (3)  | <ul> <li>Containment boundary failure or potential failure:</li> <li>a. Containment pressure &gt; 46 psig, OR</li> <li>b. Loss of all containment fan coil units and both trains of ICS, OR</li> <li>c. Containment hydrogen monitor ≥ 10% hydrogen concentration, AND</li> <li>Loss of core cooling capability:</li> <li>a. Loss of SI and RHR flow, AND</li> <li>Failure of shutdown system when required:</li> <li>a. Entry into IPEOP FR-S.1, "Response to Nuclear Power Generation/ATWS," OR</li> <li>b. Loss of AFW for greater than 30 minutes with loss of main FW and condensate.</li> </ul> | Other plant conditions that make a release of large amounts of radioactivity in a short time period possible; e.g., any core melt situation.  Examples:  - Failure of main FW and AFW systems for greater than 30 minutes without Safety Injection and Residual Heat Removal flow. Plus a containment failure is imminent.  - Transient requiring the operation of shutdown systems with a failure of these shutdown systems. In addition, failure of SI and RHR and containment failure is imminent. | GENERAL<br>EMERGENCY |
| Evac   | euation of Control Room (E-O-06 event).   | Evacuation of control room and control of shutdown systems required from local stations.  | SITE<br>EMERGENCY    |
| Conditions that warrant increased awareness on part of the plant staff will be evaluated by the Plant Manager or his designate. This is to determine if conditions are applicable for activating the E.P.  Example: Loss of AFW system when required, validated upon implementation of FR H.1 "Response to Loss of Secondary Heat Sink." |   | Other plant conditions that warrant increased awareness on the part of plant staff or state and/or local authorities.   | UNUSUAL<br>EVENT     |

# CHART K FIRE AND FIRE PROTECTION

| KNPP INDICATION  | EMERGENCY<br>CLASSIFICATION CRITERIA                  | CLASSIFICATION    |
|--|---|-------------------|
| A fire within the Auxiliary Building, Technical Support Center, safeguards alley, D/G rooms, Battery Rooms, or screenhouse that defeats redundant safety trains of ESF equipment causing the required ESF system to be inoperable. | A fire compromising the functions of safety systems.  | SITE<br>EMERGENCY |
| A fire within the Auxiliary Building, Technical Support Center, safeguards alley, D/G rooms, Battery Rooms, or screenhouse that causes a single train of required ESF equipment to be inoperable.                                  | A fire potentially affecting safety systems.          | ALERT             |
| A fire within the Administration Building,<br>Technical Support Center, Turbine Building,<br>Warehouse Annex, Auxiliary Building, or<br>Containment Building lasting more than 10<br>minutes.                                      | A fire within the plant lasting more than 10 minutes. | UNUSUAL<br>EVENT  |

**CHART L** 

(DELETED)

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### **CHART M EARTHQUAKE**

|                     | KNPP INDICATION   | EMERGENCY<br>CLASSIFICATION<br>CRITERIA                                     | CLASSIFICATION    |
|---------------------|---|---|-------------------|
| (1)                 | Activation of seismic recorder with TRIGGER, OBE, and DBE lights lit in relay room on RR159, AND            | An earthquake greater than Design Basis Earthquake (DBE).                   | SITE<br>EMERGENCY |
| (2)                 | Verification of a seismic event by physical experience or from U. of W Milwaukee Seismic Center.            |   |                   |
| (1)                 | Activation of seismic recorder with TRIGGER, and OBE lights lit in relay room on RR159, AND                 | An earthquake greater than<br>Operational Basis Earthquake<br>(OBE).        | ALERT             |
| (2)                 | Verification of a seismic event by physical experience or from U. of W Milwaukee Seismic Center.            |   |                   |
| (1)                 | Activation of seismic recorder with TRIGGER light lit in relay room on RR159, <u>OR</u>                     | An earthquake felt in plant or detected on station seismic instrumentation. | UNUSUAL<br>EVENT  |
| (2)                 | An earthquake felt in the Plant*.   | mst differention.   |                   |
| (*Si<br>dam<br>Seis | hould be confirmed by evidence of physical lage or verification from University of Wisconsin lamic Center.) |   |                   |

 $\underline{NOTE}$ : Telephone numbers for U of W - Milwaukee Seismic Center are in EPIP-APPX-A-03.

## CHART N HIGH WINDS OR TORNADO

| KNPP INDICATION  | EMERGENCY<br>CLASSIFICATION<br>CRITERIA  | CLASSIFICATION   |
|--|--|------------------|
| (1) Winds in excess of 100 mph for greater than 1 hour, AND                            | ) Winds in excess of 100 mph for greater than 1 hour, AND  Sustained winds in excess of design levels with plant not in cold shutdown. |                  |
| (2) Plant above cold shutdown condition.   | Oold Siludowii.  |                  |
| (1) A tornado which strikes the facility, AND  | Any tornado striking facility.   | ALERT            |
| (2) Causes damage to render a single train of required ESF equipment to be inoperable. |  |                  |
| A tornado observed on-site causing significant damage to the facility.                 | Any tornado on-site.   | UNUSUAL<br>EVENT |

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### CHART O FLOOD, LOW WATER, OR SEICHE

| KNPP INDICATION |                         |         |                             | EMERGENCY<br>CLASSIFICATION<br>CRITERIA  | CLASSIFICATION |
|-----------------|-------------------------|---------|-----------------------------|--|----------------|
|                 | REBAY LEV               |         |                             | Flood, low water, or                     | ALERT          |
| 0 PUMPS         | ed for > 15 n<br>1 PUMP | 2 PUMPS | CORRESPOND<br>TO LAKE LEVEL | seiche near design<br>levels.            | ALERI          |
| NOTE 3          | NOTE 1                  | ≥ 94% * | ≥ 588 ft.                   |  |                |
| < 50% *         | NOTE 5                  | NOTE 5  | < 568.5 ft.                 |  |                |
| OR Deep wa      | ter Wave ≥ 2            | 2.5 ft. |                             |  |                |
|                 | REBAY LEVed for > 15 n  |         |                             | 50-year flood, low water level or seiche | UNUSUAL        |
| 0 PUMPS         | 1 PUMP                  | 2 PUMPS | CORRESPOND<br>TO LAKE LEVEL |  | EVENT          |
| NOTE 2          | ≥ 98% *                 | ≥ 88% * | ≥ 586 ft.                   |  |                |
| < 53.1% *       | < 46.9% *<br>NOTE 4     | NOTE 5  | < 569.5 ft.                 |  |                |
| OR Deep wa      | ter wave ≥ 18           | 3 ft.   |                             |  |                |

NOTE 1: Above the bottom of bar No. 1 painted on the south wall of the forebay.

NOTE 2: Above the bottom of bar No. 2 painted on the south wall of the forebay.

NOTE 3: Above the bottom of bar No. 3 painted on the south wall of the forebay.

NOTE 4: Applies to an uncontrollable decrease (cannot be restored by operator action. If the water box inlet valves are throttled, use other means to determine lake level per E-CW-04, "Loss of Circulating Water.")

NOTE 5: The corresponding forebay level for the associated lake level is below the circulating water pump trip setpoint of 42%. Therefore, this criterion will not be reached.

\* Computer point for forebay level is L09075A and should be used because of its greater accuracy. Plant elevations and lake elevations are referenced to International Great Lakes Datum (IGLD), 1955

(IGLD 1955 = IGLD 1985 - 0.7 FEET)

# CHART P EXTERNAL EVENTS AND CHEMICAL SPILLS

| KNPP INDICATION  | EMERGENCY<br>CLASSIFICATION<br>CRITERIA  | CLASSIFICATION    |
|--|--|-------------------|
| An aircraft crash into plant buildings which causes a complete loss of an ESF function.  | Aircraft crash affecting vital structures by impact <u>OR</u> fire.                    | SITE<br>EMERGENCY |
| A missile strikes plant buildings <b>OR</b> explosion occurs within a plant building, which causes a complete loss of an ESF function.   | Severe damage to safe shutdown equipment from missiles or explosion.                   | SITE<br>EMERGENCY |
| Release of flammable or toxic gas from a ruptured container, which causes or is likely to cause evacuation of stations necessary to control shutdown systems. Portable monitors indicate toxic or explosive concentrations of the gas at life threatening levels in those vital areas.   | Uncontrolled release of toxic or flammable gas is confirmed within vital area.         | SITE<br>EMERGENCY |
| An aircraft crashes into plant buildings AND causes a single train of required ESF equipment to be inoperable.   | Aircraft crash on facility.  | ALERT             |
| A missile strikes the facility <b>AND</b> causes a single train of required ESF equipment to be inoperable.  | Missile impact from whatever source on facility.                                       | ALERT             |
| Release of toxic or flammable gas at life threatening levels from a ruptured container enter the protected area AND impacts safe operation of the plant.   | Uncontrolled release of toxic or flammable gas is confirmed within the protected area. | ALERT             |
| Self-explanatory.  | Known explosion damage to facility affecting plant operation.                          | ALERT             |
| <ol> <li>An aircraft crash within the site boundary, <u>OR</u></li> <li>Unusual aircraft activity such as erratic flying, dropped unidentified object, or other hostile acts, which threaten the plant or plant personnel. (Any other persistent aircraft activity for which identification attempts through the FAA or other agencies have been unsuccessful.)</li> </ol> | Aircraft crash on-site or unusual aircraft activity over facility.                     | UNUSUAL<br>EVENT  |
| Release of toxic or flammable gas from a ruptured tank/truck on site. Portable monitors indicate toxic or explosive concentrations at life threatening levels of the gas near the spill area.  | Uncontrolled release of toxic or flammable gas is confirmed on site.                   | UNUSUAL EVENT     |

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### CHART Q SECURITY CONTINGENCY

| KNPP INDICATION   | EMERGENCY<br>CLASSIFICATION<br>CRITERIA                   | CLASSIFICATION       |
|---|---|----------------------|
| Physical attack on the plant that has resulted in unauthorized personnel occupying the control room or any other vital areas as described in the Security Plan.                                       | Loss of physical control of the plant.                    | GENERAL<br>EMERGENCY |
| Physical attack on the plant involving imminent occupancy of the control room, auxiliary shutdown panels, or other vital areas as defined by the Security Plan.                                       | Imminent loss of physical control of the plant.           | SITE<br>EMERGENCY    |
| Security safeguards contingency event that results in adversaries commandeering an area of the plant, but not control over shutdown capability or of any vital areas as defined in the Security Plan. | Ongoing security compromise.                              | ALERT                |
| Examples: - Bomb threat accompanied by interception of bomb materials.  - Adversary intercepted in the protected area.  | Security threat or attempted entry or attempted sabotage. | UNUSUAL<br>EVENT     |
| - Undetonated bomb found within the protected area.   |   |                      |

NOTE: Security staff will not act as notifier during security events. Utilize Control Room staff for notifications.

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