

Annex 17 - BVPS Emergency Classifications And Emergency Action Levels

Emergency conditions are classified into one of four categories which indicate a potential degradation of the level of plant safety or result in a radiological.

Specific criteria are provided for the classification, and declaration of each of the emergency classes. The scheme provides for notification of appropriate emergency response organizations and for implementation of actions immediately applicable to a specific condition.

The classification scheme is comprised of emergency action levels (EALs) arranged by severity of the event and by the type of condition. There are two general types of emergency action levels included in this procedure:

- Barrier-Based EALs: These EALs address conditions that represent potential losses, or losses, of one or more of the Fuel Clad, RCS, or Containment fission product barriers. Classifications are based on the number of barriers lost or potentially lost.
- Event-Based EALs: These EALs address discrete conditions or events that are generally precursors to fission product barrier degradation, or are otherwise degradations in the level of safety of the plant. Events may be external (e.g., severe weather, security), internal (e.g. fires, explosions) or may involve radioactivity releases.

EALs are determined by the BVPS based on the type or category of the event. The emergency condition present dictate the category or classification of the event.¹ The four emergency classifications are:

A. UNUSUAL EVENT

1. Events within this classification characterize abnormal plant conditions, which, by themselves, do not constitute significant emergency conditions, but are considered to be potential precursors to more severe conditions indicating a potential degradation in the level of plant safety and/or could escalation to a more severe condition if appropriate action is not taken.
2. The purpose of this classification is to ensure that the plant operating staff takes appropriate action for the initiating condition and comes to a state of readiness to respond in the event that the condition becomes more severe. Offsite authorities are notified within 15 minutes, however, no offsite response is expected.

B. ALERT

1. The Alert classification is characterized by events, which are occurring or have occurred that involve actual or potential substantial degradation of the level of plant safety. It requires response by the plant emergency organization, augmentation of onsite emergency resources, and constitutes the lowest level where emergency offsite response may be anticipated.

¹ Reference Beaver Valley Power Station Emergency Preparedness Plan, Volume 1, Section 4

2. The BVPS Emergency Director shall declare an Alert as soon as the event has been indicated and verified. All reasonable efforts shall be implemented to make this verification promptly (if possible, within 15 minutes of the initial indication of the event).

C. SITE AREA EMERGENCY

1. A Site Area Emergency is characterized by events involving actual or likely major failures of plant functions needed for the protection of the public. Most events within this classification constitute actual or clear potential for releases of radioactive material to the environment. Any releases are NOT expected to result in exposure levels which exceed EOA protective action guideline exposure levels outside the Exclusion Area Boundary. Although emergency actions involving members of the public may not be necessary, offsite emergency response organizations should be mobilized and ready to implement protective measures should the condition degrade.
2. The BVPS Emergency Director shall declare a Site Area Emergency as soon as the event has been indicated and verified. All reasonable efforts shall be implemented to make this verification promptly (if possible, within 15 minutes of the initial indication of the event).

D. GENERAL EMERGENCY

1. This emergency class is characterized by events that are occurring or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity with release of significant radioactivity to the environment. Total activation of the onsite and offsite emergency organizations is required. Actions involving offsite populations are highly probable.
2. The BVPS Emergency Director shall declare a General Emergency as soon as an event or combination of events within this category is indicated and verified. For indications based on actual releases of radiological effluent (i.e., condition 1), or other readily apparent conditions, the verification time shall not exceed 15 minutes. For less apparent indications, the Emergency Director should ensure that an appropriate Alert or Site Area Emergency is in effect and determine the applicability of a General Emergency as soon as possible.
3. The onsite organization shall recommend offsite protective actions to designated offsite agencies. The offsite organizations will implement appropriate offsite protective actions.

E. TERMINATION/RECOVERY

1. Actions taken during an emergency situation can be categorized into two general phases: Response and Recovery. Response actions are assessment, corrective

and protective measures taken to mitigate the consequences of the event and to place the emergency under control. Recovery actions are the longer-term actions taken to restore the site, as nearly as possible, to its pre-emergency condition.

2. A point is reached where the emergency situation has decreased to the extent that it can be considered, for all practical purposes, to be resolved.
3. An emergency situation can be considered resolved, and a recovery organization established (if necessary) when the BVPS termination guidelines have been met. Some of the guidelines are:
 - a. In-plant radiation levels are stable or have decreased below acceptable levels with time.
 - b. The release of radioactive material to the environment, greater than Technical Specifications, is under control or has ceased.
 - c. Any fire, flooding, earthquake, or similar emergency conditions are under control or have ceased.
4. Termination from a severe emergency involving offsite consequences will be through joint evaluation of the utility, the States and the NRC. All emergency response and support organizations shall be notified of the termination of the emergency, and/or the initiation of recovery operations, in the same manner as was used for initial notification. At that point, the emergency can be declared to be terminated, and a recovery organization implemented, as necessary.

F. SPECTRUM OF POSTULATED ACCIDENTS

Accidents are described in the Beaver Valley Power Station Unit 1 and Unit 2 Final Safety Analysis Report (FSAR). These documents contain analysis of the consequence of the probable accidents and transients. The FSAR analyses are based on conservative assumptions. Thus, the actual consequences of a specified accident may be different than identified in the FSAR if the actual accident conditions do not match the analysis assumptions.