FENOC
FirstEnergy Nuclear Operating Company

James H. Lash
Site Vice President

724-682-5234
Fax: 724-643-8069

May 11, 2007
L-07-069

ATTN: Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Beaver Valley Power Station, Unit Nos. 1 and 2
BV-1 Docket No. 50-334, License No. DPR-66
BV-2 Docket No. 50-412, License No. NPF-73
Beaver Valley Power Station Emergency Preparedness Plan

In accordance with 10 CFR 50.54(q), enclosed please find recent revisions of the Beaver Valley Power Station Emergency Preparedness Plan. A list of the revised documents is attached.

There are no regulatory commitments contained in this letter. If there are any questions or if additional information is required, please contact Ms. Susan L. Vicinie, Manager - Emergency Response, at (724) 682-5767.

Sincerely,

James H. Lash

Attachment – List of Revised Emergency Preparedness Plan Documents
Enclosures – Revised Emergency Preparedness Plan Documents

c: Ms. N. S. Morgan, NRR Project Manager (w/o enclosure)
Mr. P. C. Cataldo, NRC Senior Resident Inspector
Mr. S. J. Collins, NRC Region I Administrator

AX45

Letter L-07-069 Attachment
List of Revised Emergency Preparedness Plan Documents

Beaver Valley Power Station

The following Emergency Preparedness Plan (EPP) documents have been revised effective April 25, 2007.

EPP Documents	TITLE	REV.
SECTION 6	Emergency Measures	24
SECTION 7	Emergency Facilities And Equipment	24
Appendix D	Emergency Equipment Listings	14

SECTION 6

EMERGENCY MEASURES

Section 6

EMERGENCY MEASURES

Table of Contents

Section 6

EMERGENCY MEASURES

Table of Contents

Section 6

EMERGENCY MEASURES

Table of Contents

6.0 EMERGENCY MEASURES

Emergency Measures are actions taken to ensure that an emergency situation is assessed and that proper corrective and/or protective actions are taken. These actions include activation of the appropriate components of the emergency organizations, both onsite and offsite; assessment of plant systems status and radiological conditions; corrective actions to ameliorate or terminate an emergency situation; protective actions to minimize the consequences of the emergency to Site personnel and to the general public in the Site environs; decontamination and medical treatment for Site personnel; and other supporting actions such as timely and accurate emergency news releases to the public.

6.1 EMERGENCY INITIATION

Emergency actions are initiated primarily in response to alarmed instrumentation, but may be initiated through notification to the Control Room by the first individual at the Beaver Valley Power Station to become aware of an apparent emergency situation. The Reactor Operator (RO) performs the necessary immediate actions to contend with the off-normal situation in accordance with Abnormal Operating Procedures, instrument alarm response procedures and/or Operating Procedures (BVPS Op Manual). The RO promptly notifies Shift Supervision of the potential emergency situation. The Shift Manager assesses the situation and, if necessary, declares the emergency. The Shift Manager assumes the role of Beaver Valley Power Station Emergency Director until he is relieved of that responsibility by the On-call Emergency Director. The Emergency Director continues to assess and classify the condition and initiates the appropriate corrective and protective actions and ensures activation of the necessary segments of the total emergency organization.

The Emergency Operating Procedures contain appropriate action statements, which refer the operator to this Emergency Preparedness Plan when specified plant parameter values are exceeded or equipment status warrants such response.

6.2 ACTIVATION OF THE ONSITE EMERGENCY ORGANIZATION

This section describes the provisions for notifying or activating personnel in the onsite Emergency Response Organization for response to emergency events at the Beaver Valley Power Station. Action levels and recognition criteria, which dictate the appropriate emergency classifications, are described in Section 4. The composition of the onsite emergency organization and the assigned responsibilities and authorities of each member of the organization is described in Section 5. The activation process for each emergency classification is described in more detail in the Emergency Implementing Procedures.

Table 6.1 summarizes the notification/activation of both the onsite and the offsite emergency response organizations and designates immediate action requirements for each emergency classification. Table 6.2 tabulates the organizations notified, the point of notification, provision for 24-hour coverage, and the communications equipment used, for each notification made.

6.2.1 Activation for Unusual Events

Upon being informed of an emergency event, which corresponds to an Unusual Event, as defined in Section 4, the Shift Manager will immediately begin to assess and evaluate the situation. He will ensure that appropriate actions have been initiated to maintain the safe and proper operation of the Site. As Emergency Director, the Shift Manager, will concern himself with the emergency response activities, delegating responsibility for corrective actions to return the plant to a safe mode and other plant operations to the Unit Supervisor.

For most Unusual Event emergencies, the emergency response functions can be performed by the on-shift emergency response organization without augmentation by called-in personnel. In these cases, the Shift Manager will ensure that the appropriate emergency functions are performed in a timely manner consistent with the nature of the emergency. The Shift Manager may designate one or more individuals from the on-duty shift to assist in this effort.

6.2.2 Activation for Alert Emergencies

Once an off-normal condition has been classified as an Alert, either initially or as an escalation from Unusual Event, the entire onsite Emergency Response Organization (as illustrated in Figure 5.3), will begin activation. The Shift Manager will:

.1 Classify the condition as an Alert.

.2 Implement immediate actions in accordance with this Plan and the applicable Emergency Implementing Procedures.

.3 Ensure the following key Emergency Coordinators are notified, as needed, using the Beeper paging system or telephone communications:

- Emergency Director
- Assistant to the Emergency Director
- TSC and EOF Operations Coordinator
- Operations Communicator
- Communication and Records Coordinator
- Radiological Controls Coordinator
- Technical Support Coordinator
- Maintenance Coordinator
- Engineering Coordinator
- Operations Support Center Coordinator
- Operations Support Center Health Physics Coordinator
- Environmental Assessment and Dose Projection Coordinator
- Security Coordinator
- Chemistry Coordinator
- Computer Coordinator
- Environmental Coordinator

NOTE

These Emergency Coordinators will initiate additional call-out of personnel, as needed.

.4 Once the designated Emergency Director, or alternate, arrives and assumes the position, the Shift Manager will re-assume control of the operation of the plant from the Unit Supervisor.

NOTE

The Emergency Director will ensure that the designated Emergency Recovery Manager, or alternate, is notified and placed on standby.

6.2.3 Activation for Site Area Emergency or General Emergency

Once an off-normal condition has been classified as a Site Area Emergency or General Emergency, either initially or as an escalation from a lower classification, the entire offsite emergency response organization (as illustrated in Figure 5.4), will be activated. The Emergency Director (Shift Manager, until relieved) will:

.1 Classify the condition as a Site Area or General Emergency, as appropriate.

.2 Implement immediate actions in accordance with this Plan and the applicable Emergency Implementing Procedures.

NOTE

The Shift Manager retains the authority and responsibility of the Emergency Director until properly relieved.

.3 Ensure the following key Emergency Managers are notified, as needed, using the Beeper Paging System or telephone communications, if not already completed.

- Assistant to the Emergency Recovery Manager
- Offsite Agency Liaison
- Support Services Manager
- Senior, Nuclear Communications Representative
- Joint Public Information Center Manager
- Chief Company Spokesperson

NOTE

These Emergency Managers will initiate additional call-out of personnel, as needed.

.4 When the Emergency Operations Facility is operational, transfer Environmental Assessment and Dose Projection activities to the EOF.

6.2.4 Activation of the Emergency Facilities

In the event of any off-normal event requiring implementation of the Emergency Preparedness Plan, the emergency response commences within the Control Room and emergency response functions are transferred to the designated emergency facilities as the incident escalates in severity and/or as the emergency response organization is activated. Beaver Valley Power Station will maintain an emergency organization and notification system, which will have the objective of meeting the response times in Table B-1 of NUREG-0654. It is recognized that 100% staff augmentation, within 30 minutes, may not be achievable under all circumstances. The onsite staff shall be augmented as soon as reasonably achievable. Section 7 describes the function, responsibilities, equipment, and communications of these emergency facilities. Emergency facilities are not usually activated for Unusual Events, but the Technical Support Center is activated for Alert and higher emergency conditions, and the Emergency Operations Facility is activated for Site Area Emergency or General Emergency. This section describes the activation of these facilities. Emergency Implementing Procedures provide other detailed information on the activation of these facilities.

.1 Control Room

The Control Room is initially the primary location of plant management control of emergencies and would under most circumstances provide sufficient capabilities to contend with emergencies classified as Unusual Events.

If an Alert or higher emergency occurs, the plant management functions would be transferred from the Control Room to the Technical Support Center. Upon arrival of the designated Emergency Director, Emergency Coordinators, and satisfactory energization of instrumentation and communications equipment activation will occur.

.2 Technical Support Center (TSC)

The Technical Support Center serves two functions, the first being plant management control of the emergency, and second, engineering and technical support of the emergency response. The first function is satisfied by the BVPS Emergency Response Organization illustrated in Figure 5.3. These personnel are activated by a call out initiated by the Shift Manager. The second function is served in the Technical Support position of the TSC and is manned by qualified technical and engineering personnel. The TSC staff calls upon other BVPS engineering personnel, as necessary, to contend with then-existing conditions.

.3 Operations Support Center (OSC)

The Operations Support Center (OSC) is primarily an assembly area for emergency response personnel and shift personnel needed for supplemental emergency maintenance team responses. An OSC Coordinator maintains accountability and interfaces with the TSC and the Control Room.

The Radiological Controls Coordinator is stationed at the Technical Support Center, and would direct Health Physics activities through the OSC-Health Physics Coordinator in the OSC. The OSC H.P. Coordinator, would call-in Radcon Technicians, as necessary. If the nature of the emergency renders the OSC unusable due to radiological conditions, OSC operations are transferred to the Alternate OSC. No other formal assignments are made to the OSC.[C15]

.4 Emergency Operations Facility (EOF)

The Emergency Operations Facility is activated for any emergency classified as Site Area or General. Personnel to staff the EOF are notified simultaneously with the TSC emergency organization. Offsite agencies may supply a liaison to the EOF as part of the activation of their individual emergency response organizations.

.5 Joint Public Information Center (JPIC)

In the event of any emergency condition at the Beaver Valley Power Station, First Energy Communications is notified as part of the initial notification process for offsite agencies and following completion of notifications to local and state emergency response organizations. The Joint Public Information Center (JPIC) is not activated for Unusual Events. For Alert emergencies, the JPIC is placed on standby. For Unusual Events or Alerts, Company news announcements will be distributed from the Corporate Offices or from the JPIC upon its activation. For Alert emergencies, Communications Representatives will report to the Emergency Operations Facility to initiate development of news announcements and to anticipate the activation of the JPIC should the incident escalate.

For Site Area Emergency or General Emergency, the Communications Emergency Response Team will activate the JPIC, located adjacent to the Alternate EOF in Coraopolis, PA.

6.3 ACTIVATION OF THE EMERGENCY SUPPORT GROUPS

6.3.1 Offsite Emergency Response Groups

The Emergency Director shall ensure that appropriate offsite emergency response groups are contacted to provide the type and level of emergency assistance which may be required to deal with the existing emergency condition. The organizations listed below may be contacted for assistance. Methods available for contacting these support groups include direct telephone communications with individual organizations and message relay through the Beaver County Emergency Services Center. Each of these agencies can be notified and can respond on a 24-hour-per-day basis.

- The Medical Center, Beaver
- University of Pittsburgh Medical Center-Presbyterian University Hospital
- Offsite fire departments
- Offsite ambulance services

- Pennsylvania State Police (security assistance)
- Beaver County Sheriff's Department (security assistance)

6.3.2 First Energy Operating Company (FENOC) Corporate Organization

Notifications will be made to FENOC Headquarters as appropriate to the type and severity of conditions at the Beaver Valley Power Station. The method for alerting the corporate organization from BVPS is a graded system of notifications, which, to the extent possible, follows normal organizational lines of communications. Once the emergency has been declared, the Shift Manager shall notify the designated Emergency Director, and other personnel, by the appropriate notification method in the Implementing procedures. [C36] Additional notifications to FENOC management will be made, consistent with the nature and severity of the emergency. Communications personnel are activated as part of the Onsite Emergency Response Organization.

6.3.3 Other Organizations Providing Onsite Support

The Westinghouse (W) Water Reactors Division provides emergency assistance to the Beaver Valley Power Station under the provisions of the W Emergency Response Plan. In the event of an Alert or higher Emergency, the Communications & Records Coordinator or designee notifies the W Water Reactors Division. Upon receipt of this notification, the W plan is initiated and the W emergency organization is activated. If appropriate, Site Response Personnel will be dispatched to the onsite Technical Support Center. The W plan provides for 24-hour-per-day notification and response capability.

Assistance from contractor groups and other utilities is not considered to be an immediate action. Thus, these groups will be contacted by TSC and/or EOF personnel as necessary to augment onsite personnel.

The FENOC Institute for Nuclear Power Operations (INPO) administrative point of contact coordinates all requests for emergency assistance.

6.4 ACTIVATION OF OFFSITE EMERGENCY RESPONSE ORGANIZATIONS

The Emergency Director shall ensure that offsite authorities are notified and apprised of emergency events at the Beaver Valley Power Station. Notifications are either initial or follow-up. Initial notifications inform offsite agencies that an event has occurred and, as applicable, the emergency response actions necessary. Follow-up notifications provide technical information on the incident on a periodic basis. For Site Area or General Emergencies, the offsite agencies in the Emergency Operations Facility will interface with the BVPS emergency organization through the Offsite Agency Liaison, as necessary.

Detailed notification procedures, call-lists, and notification forms are provided in Emergency Implementing Procedures. Procedures include the use of a code word for authenticating notifications[C2]. The communications systems used for notification are described in Section 7 of this Emergency Preparedness Plan.

6.4.1 Initial Notifications

Notifications are made to the offsite authorities listed below:

- Beaver County Emergency Management Agency (host county)
- Pennsylvania Emergency Management Agency (host state)
- Columbiana County Emergency Management Agency (Ohio)
- Hancock County Office of Emergency Management (West Virginia)
- Ohio Emergency Management Agency
- West Virginia Division of Homeland Security/Emergency Management
- US Nuclear Regulatory Commission

The Pennsylvania Emergency Management Agency (PEMA) notifies the Pennsylvania Department of Environmental Protection/Bureau of Radiation Protection (DEP/BRP).

CCEMA and HCOEM both notify their respective state organizations. Each organization notified performs notifications in addition to those specified in accordance with their respective emergency response plans and procedures.[C47]

Since the initial contact with offsite authorities is generally made to a communications operator or other similarly qualified individual, the initial notification will be simple, brief, and factual. To facilitate notification, Initial Notification message forms are supplied to all appropriate offsite agencies. These forms contain pre-printed text with blanks for incident specific information. Where feasible, the blanks contain a choice of words and/or phrases which, when circled, complete the message text. The message provides information that an emergency condition exists, the classification of that emergency, whether or not a release of radioactive material is occurring or could occur, and recommendations for offsite protective actions.

Upon receipt of an initial notification the individual contacted at each agency notifies the Director of that agency, or other designated personnel and relays the message provided in the initial notification. The cognizant individual then contacts the facility for additional follow-up technical information. In Pennsylvania, DEP/BRP performs the call-back for PEMA.

The process described above provides necessary notifications in a manner, which facilitates accuracy and provides for verification of the notification.

Notification of an Unusual Event is primarily to ensure that the authorities are cognizant of the details of events, which might arouse public concern and initiate inquiries by the news media, or members of the public.

Primary means of notification is by regular telephone. An Emergency Telephone System (ETS) connection onsite for contacting the USNRC, and "hot-line" exists between the Site and DEP/BRP. Back-up radio communications capability exists between the Control Room and each of the risk county Emergency Operations Centers (EOCs). See Table 6.2.

6.4.2 Follow-up Notifications

The follow-up notification form serves two purposes: The first is to provide technical information on the emergency directly to those individuals qualified to use the data. The second is to provide a means for offsite authorities to verify the authenticity of any emergency notification.

A Follow-up Notification Form has been developed and supplied to all appropriate offsite agencies. Similar in format to the Initial Notification Form, the Follow-up Notification Form contains data blanks which, when filled in, provide the following information:

- Location of incident and name and telephone number of caller
- Date/time of incident
- Class of emergency
- Type of actual or projected release and estimated duration/impact times
- Estimate of quantity of radioactive material released or being released and the points and height of releases
- Chemical and physical form of released material, including estimates of the relative quantities and concentration of noble gases, iodines and particulates
- Meteorological conditions and stability
- Actual or projected dose rates at site boundary; projected integrated dose at site boundary
- Projected and integrated dose at peak for 2, 5 and 10 miles
- Estimate of any surface radioactive contamination inplant, onsite and offsite
- Licensee response actions underway
- Recommended emergency actions, including protective measures
- Request for any needed onsite support by offsite organizations
- Prognosis for worsening or termination of event based on plant information

Unlike the Initial Notification Form, the Follow-up Form is not intended to be relayed word-for-word. The objective of the form is to standardize the information provided to offsite agencies by different communications personnel.

Following activation of the Emergency Operations Facility (EOF), technical data will be provided directly to state, local, and Federal liaison personnel at the EOF, providing additional information in conjunction with the Follow-up Notification Form.

6.4.3 Subsequent Notifications

In the event it becomes necessary to escalate an emergency classification, the Initial Notification Form will be used, in the manner described for initial notification, to notify offsite agencies of the escalation of the emergency.

6.5 ASSESSMENT ACTIONS

Provisions are made for assessment throughout the course of an emergency to ensure effective coordination, direction, and upgrading of emergency activities in a timely manner. The assessment actions are described, in detail, in Emergency Implementing Procedures. Assessment facilities and equipment are described in Section 7 of this Plan. The assessment functions, the general methodology, and the techniques utilized are identified in this section.

6.5.1 General Assessment Actions

.1 Unusual Event

Continuous assessment of the status of plant systems and radiological conditions is provided by plant instrumentation and is supplemented by routine surveillance functions. The occurrence of an Unusual Event will be recognized by instrument alarms or indications, surveillance results, or other observations of an off-normal condition by an individual at the site.

For events which require dispatching the Emergency Squad (or additional emergency teams), the initial and continuing assessment will be performed by the Emergency Squad Chief. His training and experience enable him to evaluate the condition and implement the proper corrective actions.

Offsite dose projections may be performed if the event involves radiological effluent releases. These dose projections are continually repeated throughout the duration of the release to reflect any significant changes. If warranted, the emergency classification will be upgraded to an Alert or higher. Methods for performing rapid dose projections are described in detail in Emergency Implementing Procedures, and are summarized in Section 6.5.3.

.2 Alert

Assessment action for an Alert include upgrading of the functions performed for an Unusual Event as appropriate for the condition. Examples are:

- Increased surveillance of in-plant instrumentation
- Additional assistance obtained from off-duty personnel and/or offsite support groups
- Extended radiological monitoring
- Intensified dose projection activities

.3 Site Area Emergency

Assessment actions for a Site Area Emergency will be responsive to the increased probability of major failure of plant safety functions and a higher potential for release of significant quantities of radioactive material. Examples include:

- Increased surveillance of instrumentation, which may provide information on the status of the core and reactor coolant system.
- Increased offsite monitoring efforts.
- Coordination of offsite dose assessment activities with DEP/BRP.
- Increased reactor coolant sampling and analysis frequency.

.4 General Emergency

The emphasis of assessment actions for a General Emergency will be placed on the likelihood of substantial core degradation, potential loss of containment integrity and release of significant quantities of radioactive material. Surveillance of instrumentation relative to the core condition, reactor coolant system activity, containment pressure and radiation level, and radioactive effluents will be increased. Dose projection and offsite monitoring efforts will be further intensified and communications will be maintained with DEP/BRP and corresponding agencies in Ohio and West Virginia to ensure that offsite dose assessments are based on the best available information.

Recommendations for protective actions will be provided, as applicable, to PEMA, BCEMA, OEMA, CCEMA, WVDHS/EM and HCOEM.[C47]

6.5.2 Plant Systems Status

Process and effluent parameter monitoring instrumentation has been installed to provide a capability to identify that an off-normal condition exists, to determine the extent and nature of the off-normal condition, to assess the radioactivity in effluent paths, and to determine the effectiveness of corrective and mitigative measures such as safety injection or containment isolation. This equipment is described in Section 7 of this Plan and in the BVPS Updated Final Safety Analysis Report (FSAR) and Operating Manual.

The Reactor Operator has primary responsibility for monitoring and assessing plant systems status, reporting such status to shift supervision, and taking appropriate corrective action in a timely manner.

The Staff Nuclear Advisor supports the shift operations personnel in assessing off-normal conditions and in recommending appropriate corrective action.

When activated, the Technical Support Center (TSC) will augment the Staff Nuclear Advisor in performing accident assessment activities and in recommending corrective actions to place the plant in a safe configuration and to mitigate the consequences of the event. The TSC staff has access to all plant parameter indications through analog/digital data and voice communication links.

6.5.3 Dose Projection

.1 General

Dose projection is the assessment of the radiological consequences of an accidental release of radioactive material from the Site. The primary objective of these consequence assessments is to support decisions regarding the need for protective actions for members of the general public. A multi-component capability for performing dose projections for both gaseous and liquid radioactivity releases from the Site has been established. Necessary radiological, process, and meteorological information to support this assessment activity have been provided in the Control Room and in the TSC/EOF, and are described in Section 7 of this Plan.

There are several principles that are reflected in the dose projection methodology and implementing procedures at the Beaver Valley Power Station. These principles are:

- Dose projections are primarily performed to support decisions on offsite protective action recommendations in slowly developing emergency situations. Protective action decisions for quickly developing situations are based on pre-calculated Emergency Action Levels and plant systems status assessments.

- Time permitting, dose projection results may be considered in conjunction with results from plant systems status assessments in protective action decisions. In the event of a significant discrepancy between a protective action indicated by dose projection results and that indicated by plant systems status assessments, the most conservative (i.e., leading to the lower population dose) recommendation that cannot be readily discounted shall be relayed to appropriate offsite agencies.

- Compatibility in the dose assessment methodologies used by BVPS and the offsite agencies is largely an unachievable goal. The level of technical sophistication varies greatly from agency to agency. Technical information regarding the BVPS methodologies is routinely made available to these agencies and periodic comparison exercises are conducted.

- BVPS personnel will make every reasonable effort to resolve differences that may arise between onsite dose projection results and those results generated by the various offsite response agencies. However, in the absence of a resolution of the differences, the BVPS protective action recommendations shall be based on the onsite dose projection results, and/or plant systems status assessments.

.2 Dose Projection Capabilities

The dose projection capabilities and the implementing procedures provide methods for performing dose projections under a wide range of circumstances. There are four major components to the BVPS dose projection capability: (1) Computer-assisted Class A Model, (2)

Computer-assisted Class B Model, (3) Class A Model Hand Calculational Methods, and (4) Liquid Release Computer assisted and hand calculational models. These models are described in detail in supporting technical documentation, and procedures for their use are included in the Emergency Implementing Procedures EPP/IP-2.xx series. In brief summary:

- Computer-Assisted Class A Model

  The dose assessment capabilities at BVPS are centered around the Atmospheric Radioactivity Effluent Release Assessment System (ARERAS). ARERAS is a data collection and analysis system comprised of two (2) computers, associated data storage, display terminals, and communication hardware, configured in two (2) redundant nodes. Each node is independently powered from one of two battery-supplied uninterruptable power distribution systems in the Emergency Response Facility. Meteorological and effluent radiological information is continuously collected and stored by ARERAS.

  ARERAS runs the proprietary MIDAS (Meteorological Information and Dose Assessment System, Pickard, Lowe and Garrick, Washington, DC) software. The BVPS implementation of MIDAS contains the generic MIDAS code modules adapted to the BVPS site through extensive site adaptation parameter files.

  NAEXEC (Variable Trajectory Plume Segment Model) is the Class A model in the BVPS implementation. This model provides the user with a variable trajectory plume segmented model dose projection capability. Flexible run time option choices provide for varying combinations of data sources, accident source terms, decay periods, report types, and other parameters. Reports available include X/Q, gamma dose, inhalation thyroid, and projected TEDE and CDE/thyroid dose.

- Computer-Assisted Class B Model

  In addition to the Class A model, the BVPS implementation of MIDAS incorporates an advanced Class B model. This model employs modified potential field with tracker particle technology ("particle-in-cell"). The wind field is a 25 x 25 rectangular grid matrix covering the 50 mile environs of the site. There can be up to six (6) vertical layers. To enable addressing the wind shear that may

occur in the valley, the model can generate two (2) independent wind fields -- one on top of the other. A three-dimensional digitized grid map of the surrounding terrain supplements the wind field grid, and makes the model specific to BVPS. A new wind field is generated every simulated 15 minute period, as necessary, using actual or forecast meteorological information.

Into this wind field, the model injects tracker particles that carry source term data. Every simulated 15 minutes, the model injects 240 particles into the field. These particles, along with the particles from prior time steps, are allowed to disperse through the wind field. Each time step, the dispersion halts, and the model counts the particles in each cell, transposing the data into a polar coordinate grid of 64 angular sectors and 15 radial sectors. Ground deposition, if applicable to the source term mix, is applied as a vector quantity. This model operates within the same user interface as the Class A model, with many of the same run-time options. The model is operated by qualified Environment Assessment and Dose Projection personnel in the EOF, and is used primarily to verify the results of the initial Class A model runs and in post-accident assessments.

- Class A Hand Calculation Methods

  There are several hand calculational procedures in the emergency preparedness plan implementing procedure series 2.6x. Prior to the implementation of the computer assisted methods identified above, these procedures were the primary means of performing dose projections at BVPS. These procedures are now retained as a backup methodology should the computer-assisted methods become unavailable. Each procedure addresses a particular dose projection calculation. Of these procedures, EPP/IP-2.6.1, "Dose Projection -- Backup Methods," is the most important, providing means to calculate X/Q, calculate doses using actual monitor data and selected accident type, and to calculate doses using default accident releases. Other procedures in this series address:

  - Using Alternate Sources of Meteorological Data.
  - Determining Plume Width, Plume Height, and Transit Time.
  - Dose Projection with Known Isotopic Release Rate or Known Isotopic Quantity.

- Dose Projection with Source Term Based on Field Measurements.
- Estimation of Ingestion/Inhalation Dose Commitments.
- Integrated Dose Assessment.

- Liquid Release Hand Calculational Methods

  Procedure EPP/IP-2.7 and EPP/IP-2.7.1 provides a series of methods of assessing the radiological consequences of liquid releases to the Ohio River. The objective of these methods is to assess whether or not the release has exceeded the Emergency Action Levels listed in TAB 7 of the BVPS Classification Procedure. This method determines the liquid concentration and dose at the entrance of the Ohio River and whether or not the release will result in activity at the Midland Water Treatment Plant intake that exceeds EPA drinking water standards. The procedure provides methods to address releases via normal monitored pathways and unmonitored releases.

.3 Technical Basis Summary

The atmospheric dispersion and dose projection methodologies are based on recognized national and international standards. The primary documentation for each method describes the technical bases for each method in detail. The paragraphs that follow summarize some significant basis.

- For the Class A models, the value of the atmospheric dispersion factor, X/Q, is based on the guidance of Regulatory Guide 1.145, "Atmospheric Dispersion Models for Potential Accident Consequence Assessments at Nuclear Power Plants." In the hand methods, all releases are treated as ground level releases. The MIDAS Class A model algorithm addresses ground level and elevated releases, plume rise, virtual source building wake correction, and other similar considerations. Plume direction is based on the 150' wind direction sensors due to terrain interference on the 35' sensors.

- The dose projection methodology is based on Regulatory Guide 1.109, "Calculation of Annual Dose to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR 50, Appendix I," and TID-21490, "Meteorology and Atomic Energy." The Class A models are based on semi-infinite submergence dose and on ICRP 30 intake models. The MIDAS Class B dose is based on the sum of three (3) components: finite cloud plume shine, whole body inhalation dose, and whole body ground shine dose.

- Source term processing is performed with default source term mixes associated with the FSAR - analyzed accidents, or with input isotopic sample data. These source term mixes are used to normalize both the monitor efficiency and the dose conversion factors for energy-dependent variations. The MIDAS Class A and Class B model software decays the source term mixes for the period between plant shutdown and start of release, and applies decay corrections in route.

.4 Meteorological Considerations

Because of the complex terrain surrounding the Beaver Valley Site, it is not always possible to accurately determine the plume trajectory from the site meteorological instrumentation alone. This situation creates uncertainty in the identification of the affected area. The ARERAS Class B model can more accurately predict plume transport as a digitized three-dimensional terrain map as an input database for the model. The technical sophistication of this model, the resulting complexity, and the required computer run-time makes it unlikely that the model results would be immediately available in a rapidly developing situation. As a result of these terrain impacts, it will be necessary to apply conservative compensatory factors to the observed site meteorological conditions.

A meteorological study performed in 1982 determined that there were three (3) meteorological regimes that characterized the dispersion meteorology at the BVPS site. The paragraphs below identify these three regimes, and the likely affect on plume transport.

A. Night-time conditions (G, F, E stability) with 500' wind speeds lower than 4.0 mph.

Under these conditions, the regional wind flows will create a valley floor flow that is de-coupled from the regional wind flow. Upriver of the site (towards Beaver) the valley wind flow is

towards the site. Downriver from the site, the wind flows are also towards the site. A heat island at the site of the J&L Specialty Steel plant creates a "chimney" effect that circulates these converging flows. If there is an inversion layer (as there is most likely), the upward chimney flow is recirculated back into the valley. This circulation will continue in the site area. If there is no inversion, the outlet flows from this chimney are injected into the regional wind flow.

Releases during these conditions will tend to "puddle" in the site area and will be generally contained within the valley walls. Releases that break through the inversion layer (if there is one) would follow the 500' winds.

B. Night-time or day-time conditions with 500' wind speeds greater than 4.0 mph.

Under these conditions, the regional wind flow creates eddies as the flow breaks over the leading edge (wind passes this first) of the valley and as it strikes the opposite valley wall. However, due to the regional wind velocity, these eddies and swirls continue to circulate and mix with the regional wind flow. This creates a scrubbing action that flushes the valley. A similar scrubbing effect will occur if the regional wind direction aligns with the valley.

A release under these conditions will follow the 500' wind direction.

C. Day-time with 500' wind speeds lower than 4.0 mph.

Under these conditions, the regional wind flow creates eddies as described above. However, since the wind velocity is low, the scrubbing action is not as strong, and the regional wind flow will create a de-coupled flow in the valley. This valley flow will tend to flow downriver in the absence of any other forces (i.e., regional wind direction aligns with valley).

Releases during these conditions could result in two (2) plumes, depending on wind direction, or a plume that starts in one direction and then changes direction as it leaves the valley area.

.5 Initiation and Performance of Dose Projection Functions

In the event of a known or projected release of radioactive material, immediate and continuous assessment, including dose projection, is performed by on-duty shift personnel. Following activation of the Technical Support Center, dose projection activities are performed by the Environmental Assessment and Dose Projection Coordinator and assigned assistants at the TSC. Upon declaration of a Site Area or General Emergency, this function transfers to the Emergency Operations Facility (EOF). Responsibilities and functions assigned to these personnel are identified in Section 5 of this Plan. Activation of the emergency facilities is described in Section 6.2.3. The training of personnel assigned dose projection functions is identified in Section 8.

6.5.4 Field Radiological Monitoring

Radiological monitoring following a release of radioactive materials to the environment is an intrinsic part of the Beaver Valley Power Site Emergency Preparedness Plan. Emergency radiological monitoring includes actions such as dose rate surveys, sampling and analysis of airborne and liquid activity, and collection and analysis of environmental media, both onsite and offsite. The extent and degree of radiological monitoring following a release of radioactive material will depend on the nature, the severity, the physical/chemical form, and the radioisotopic composition of the release.

Emergency Implementing Procedures provide guidance to the EA and DP Coordinator and monitoring team personnel in the performance of this radiological monitoring. These procedures identify criteria and guidelines, instrumentation to be used, monitoring team protective actions, communications protocol, data handling methods, and predesignated survey routes and survey points. Environmental monitoring procedures identify the location of environmental monitors, the use of the monitors, the sampling techniques and analysis methods to be used.

The Beaver Valley Power Station offsite monitoring teams may be supplemented or supplanted by monitoring teams from local, state, and Federal agencies. The Environmental Assessment and Dose Projection Coordinator will interface the activities of the BVPS offsite monitoring teams with the monitoring teams of the governmental agencies.

Initially in radioactive release situations, the Beaver Valley Power Station is in the best position to dispatch qualified monitoring personnel, and therefore has short-term responsibility of all offsite emergency radiological monitoring. However, following activation of the offsite emergency organizations and the deployment of governmental monitoring personnel, primary responsibility for offsite monitoring will revert to the state governments in the affected area. The state governments are assisted in this effort by personnel and equipment from the Federal Radiological Monitoring Assistance Program.

The types of emergency radiological monitoring performed and the methods for performing this monitoring are discussed below.

.1 In-Plant Radiological Surveys

Procedures for performing radiological surveys and the use of survey equipment are incorporated in the Beaver Valley Power Station Health Physics Manual. The methods and techniques are essentially the same as those used for emergency surveys.

.2 Onsite Radiological Monitoring

In the event of a radioactive release, one or more onsite radiation monitoring teams may be dispatched to assess radiological conditions onsite and at the site boundary in order to verify dose projection results and to determine the need for onsite protective actions.

Monitoring teams are normally comprised of one radcon technician and one other individual. Since there is a radcon technician on shift at all times, at least one monitoring team can be dispatched soon after the release has occurred, with additional teams dispatched using available personnel onsite or called-in personnel as they arrive onsite. Onsite monitoring teams maintain communications with the Control Room/OSC via portable radio transceivers. Survey equipment is provided for air sampling, direct radiation measurements, and for field-checking air sampling media. All sampling media is returned to the Site or to another designated location for laboratory analysis, as appropriate.

.3 Offsite Radiological Monitoring--Gaseous Release

In the event that dose projection results or onsite monitoring results indicate the potential for radioactivity release to offsite areas, offsite radiation monitoring teams will be dispatched. Initially, at least one monitoring team will be sent in the direction of the plume movement.

The onsite monitoring team may be diverted from onsite monitoring to perform offsite monitoring. As additional radcon personnel assemble, additional monitoring teams will be deployed at the discretion of the Environmental Assessment and Dose Projection Coordinator.

Offsite monitoring team personnel take direct radiation readings with appropriate survey instruments and take air samples for analysis of airborne radioactivity. Air sample media are field-checked and significant results reported immediately to the EA and DP Coordinator. The field analysis provides for a minimum sensitivity for radioiodine detection of less than 1 x 10-7 uCi/cc, in the presence of radioactive noble gases. All monitoring results are recorded on data sheets by the monitoring teams and reported to the EA and DP Coordinator. Vehicles for monitoring teams are available on BVPS controlled property. Instructions for securing FMT vehicles are provided in the Implementing Procedures.

.4 Offsite Radiological Monitoring--Liquid Release

In the event of a release of radioactivity to the Ohio River, a monitoring team is sent to the Midland Water Treatment Plant (closest treatment plant) to collect samples of drinking water. Installed environmental monitoring sample pumps routinely draw samples of drinking water for subsequent laboratory analysis. Upon arrival at the treatment plant, monitoring personnel will take the on-line sample for analysis and will collect additional samples as directed by the EA and DP Coordinator. Sampling may be extended to downriver treatment plants if preliminary sampling results at Midland indicates the need. Vehicles for monitoring teams are available on BVPS controlled property. Instructions for securing FMT vehicles are provided in the Implementing Procedures.

.5 Emergency Environmental Monitoring

The Beaver Valley Power Station has made provisions for required post-accident environmental monitoring. Additional samples may be taken, or samples may be taken ahead of schedule, if deemed warranted by the Environmental Assessment and Dose Projection Coordinator. Qualified personnel perform all environmental sampling and analysis. [C31]

6.6 CORRECTIVE ACTIONS

Detailed Operating Procedures, Abnormal Operating Procedures, and Emergency Operating Procedures are utilized by the site operating personnel to assist them in recognizing emergency events and taking the corrective actions necessary to place the plant in a safe condition. Additionally, Emergency Implementing Procedures, as listed in Appendix C, describe subsequent and supplemental corrective actions for the scope

of potential situations within each of the emergency classifications. These procedures are designed to provide general guidance to personnel for correcting or mitigating the condition as early and as near to the source of the problem as feasible. Actions are specified, for example, which may prevent or significantly reduce a potential release of radioactive material, provide for prompt fire control, and ensure timely damage control and repair. The Emergency Implementing Procedures are also utilized in emergency training and are the basis for periodic emergency drills, and emergency equipment operational checks.

6.7 PROTECTIVE ACTIONS

Protective actions are implemented to prevent or mitigate consequences to individuals during or after a radiological incident. Protective actions within the Beaver Valley Power Station site boundary, in response to an emergency originating at BVPS, are the responsibility of the BVPS Emergency Director. However, such protective actions may require coordination with other onsite organizations or the unaffected BVPS Unit, and may include assistance by offsite organizations. Protective actions outside the Beaver Valley Power Station site boundary are primarily the responsibility of state and local emergency organizations, but may require coordination of activities, dissemination of appropriate data, and recommendations by the BVPS Emergency Director.

6.7.1 Onsite Protective Actions

.1 Evacuations

The primary protective measure for onsite personnel in an emergency is prompt evacuation from areas, which may be affected by significant radiation, contamination or airborne radioactivity.

Significant aspects of the various classes of evacuations are described in sections 6.7.1.2 through 6.7.1.4. General provisions applicable to all evacuations are:

- In addition to the normal site complement, there are often visitors, construction workers, and nonconstruction contractors and vendors onsite. These construction personnel and contractors receive training, which addresses their responsibilities during an evacuation, prior to being issued a site badge. All other persons onsite, other than FENOC personnel assigned to BVPS, will be treated as visitors during evacuations. As such, these visitors will follow all instructions provided with regard to evacuations in site paging system announcements.

- Protective Action Guides (PAGs) for evacuations are provided in the Emergency Implementing Procedures. Although the primary reason for evacuation is likely to be a radiological condition, evacuations may be indicated for other conditions, which create habitability problems, such as toxic gases, and/or fire. Appropriate PAGs are provided for these hazards in the Emergency Implementing Procedures.

.2 Local Evacuation

This category refers to evacuation of localized areas within the site. Evacuation of personnel from localized areas is initiated primarily by local area radiation monitors (ARM) and/or continuous air monitors (CAM). The alarm setpoints are based on normal levels of radiation and airborne radioactivity and expected fluctuations within the specific areas. The immediate response by individuals in the vicinity of such an alarm is evacuation to an unaffected area, possibly within the same building, but away from the localized condition, and reporting the situation to the appropriate Control Room. In the absence of readily available radiological surveillance information or other logical assessment of conditions, those individuals will evacuate at least to a point where other radiological monitors show that the area is unaffected. Applicable instructions to personnel, based on evaluation of Control Room instrumentation or other supporting information, may be transmitted over the site paging system.

Strategic location of the radiological monitors and the requirement for immediate evacuation in response to alarms from these monitors provides reasonable assurance that radiological consequences of a localized incident will be minimized. Frequent radiological surveys throughout the site provide continuing verification of levels and trends indicated by these monitors. These surveys, as well as any other detection methods, can also serve to initiate the evacuation of personnel for conditions, which may not otherwise be identified by these monitors.

.3 Site Assembly

The declaration of a Site Assembly (as ordered by the Emergency Director/Shift Manager until properly relieved) requires all non-emergency response personnel to assemble at Primary or Near-Site Assembly Areas. Personnel within the protected area shall report to their designated Primary Assembly Area. These Primary Assembly Areas are identified below:

- BV-1 Service Building - Locker Room
- SOSB - 3rd Floor - Locker Room
- C28
- Nuclear Construction Office and Shops (NCOS) 2nd Floor
- C45

Personnel located outside the protected area but within the owner controlled property shall report to their designated Near-Site Assembly Area. These areas are listed below: C25

- C28
- C30
- Training Building C19
- Warehouse B

The actual decision to implement a Site Assembly is the responsibility of the BVPS Emergency Director. This decision is based largely on his evaluation and judgment of the magnitude and severity of the particular situation. Factors to be considered must include the apparent levels of radiation and/or airborne radioactivity involved, the exposure to personnel that would result from evacuating as well as not evacuating to the Primary Assembly Areas. In the event of a multiple alarms (fire, ARMs, or CAMs) within the Controlled Area, the BVPS Emergency Director may deem it prudent not to evacuate personnel outside of the Controlled Area but within the Site's protected area fence, and allow work to continue if these personnel are not at risk.

.4 Site Evacuation

Site Evacuation requires that all individuals within the BVPS exclusion area, except for Control Room operations personnel and others, with specific emergency assignments, evacuate and proceed to the designated Remote Assembly Area, located upwind of the release or other designated area. This Site Evacuation includes all non-essential persons on site, and any other persons within the exclusion area. The Remote Assembly Areas for BVPS personnel are located at:

- The Hookstown Grange
- Community College of Beaver County

Implementation of a Site Evacuation is the responsibility of the BVPS Emergency Director. That decision is based on the severity of the incident, the likelihood of escalation, and the radiation and airborne radioactivity levels throughout the site, particularly (but not exclusively) at the Primary Assembly Area. Primary Assembly Area dose rates and airborne radioactivity concentrations are determined by radiation control personnel using portable survey instruments and air sample collection devices and/or readings from fixed radiological monitors.

Notification of a Site Evacuation is made via the site paging system, consisting of evacuation alarm signal and message announcement.

.5 Personnel Accountability

To ensure that all Site personnel present in affected areas have been evacuated and to ascertain the whereabouts of all emergency personnel who have not evacuated, measures have been established to provide for personnel accountability in the event of an evacuation. Accountability of evacuated and nonevacuated personnel (emergency workers) will be performed in accordance with the detailed Emergency Implementing Procedures. All individuals within the protected areas of BVPS are issued a security keycard badge. These security badges form the basis of the accountability process.

In the event of a local assembly near-by supervision shall ensure that all personnel have evacuated the affected area.

In the event Accountability is declared, personnel accountability will be accomplished through the use of the computerized access security system (key-card). This system has provisions for identifying and printing a listing of all personnel in selected areas of the site. Site personnel update their whereabouts in the computer by inserting their security badge/key-card in the readers adjacent to the security doors leading to these areas. The results from the assembly areas, and from personnel performing emergency response functions who can not report to an assembly area but are listed on a Site Accountability Form are reported to the Security Coordinator (on-duty Security Supervisor, until relieved by designated Security Coordinator), who provides a tabulation of missing individuals to the Emergency Director. If necessary, search and rescue efforts will commence in accordance with Emergency Implementing Procedures. The initial accountability phase shall be completed within thirty (30) minutes. Unaccounted for personnel are reported to the Emergency Director who shall take the necessary steps to initiate Search and Rescue.

.6 Contamination Control

The Beaver Valley Power Station Health Physics Manual (HPM) contains provisions governing the control of contamination including access control, use of protective clothing, contamination monitoring, and the release of potentially contaminated items from controlled areas. Chapter 3 of the HPM contains procedures that implement the HPM provisions. The requirements and guidelines of these documents shall apply to contamination control during emergency conditions. Emergency Implementing Procedures provide the interface between the HPM and the Emergency Preparedness Plan. These procedures authorize the Radiological Controls Coordinator to waive or modify certain normal contamination control methods, if other conditions, such as delaying necessary evacuations, personnel rescue, or delaying access to necessary plant equipment would create a greater hazard to plant personnel or the general population.

There are no potentially affected agricultural products within the Beaver Valley Power Station exclusion area. The Ohio River, which flows within the exclusion area, however, is a navigable river and is the source of water for several downstream communities and industrial facilities.

Domestic water at the Beaver Valley Power Station is provided by the Midland Water System. It's distributed by the domestic water system, which is a closed system. As a result of this configuration, contamination of the drinking water is unlikely. The Midland Water System storage tank has sufficient capacity to meet short-term needs.

With the exception of food brought to the site by Site personnel, all food supplied to the site arrives sealed for vending machine sale. These machines are located in noncontrolled areas. If these areas become contaminated they will be considered as controlled areas, and eating will be prohibited as is normally the case for controlled areas. Normal controlled area access controls will prevent the removal of contaminated food from these controlled areas and possible ingestion by unwary individuals.

Contamination monitoring will be performed as specified in the HPM. During Site Evacuations, personnel and vehicle contamination surveys are performed at a location on the site exit road. Contaminated personnel will be returned to the Site, for decontamination. In the event that the Site Evacuation must be made immediately, the survey process will result in undue delay in evacuating site personnel, personnel will be directed to proceed, with personal automobiles, to the designated remote assembly area. Personnel monitoring will be performed at the location.

Decontamination of materials and equipment are performed in areas provided for that purpose within the Beaver Valley Power Station. The Liquid Waste System, described in the BVPS Operating Manual, provides the capability to store and process decontamination wastes. The handling of solid radioactive waste is also described in the Operating Manual and Health Physics Manual.

Personnel decontamination is described in Section 6.8.1.

.7 Exposure Control

The exposure of Site personnel during emergency operations shall be maintained as low as reasonably achievable, and should be maintained less than the administrative guides established in the BVPS Health Physics Manual (HPM) and/or less than the Federal Radiation exposure standards established in 10 CFR 20. In order to accomplish this objective, administrative means used during normal operations to minimize personnel exposure (such as radiation work permits and ALARA measures) should remain in effect to the extent consistent with timely implementation of emergency measures.

If necessary operations require personnel exposures in excess of the normal control limits, or if normal access control and radiological work practices will result in unacceptable delays, the Radiological Controls Coordinator may, at his discretion, waive or modify the established exposure control criteria and methods. The Emergency Director is the only individual who may authorize dose extensions in excess of 10CFR20.

Table 6.3 summarizes the emergency exposure criteria for entry or re-entry into areas for the purposes of undertaking protective or corrective actions. Two classifications of emergency exposure are identified: corrective actions, and lifesaving actions. Lifesaving actions include actions such as rescue, first aid, personnel decontamination, medical transport, and medical treatment services, when such actions are immediately necessary to save a life. Corrective actions include surveillance actions and plant operations necessary to minimize further deterioration of the level of plant safety or to mitigate the consequences of the accident, if failure to perform these actions could result in a significant increase in offsite exposures. Personnel exposures received performing emergency measures, other than those identified above, shall be limited pursuant to 10 CFR 20.

Dosimetry monitoring equipment is provided at the Site as part of the normal Radiation Control Program, and such dosimetry will continue to be used during emergency situations. Health Physics Procedures provide guidelines and procedures for issuing, using, and reading dosimetry devices and provisions for exposure record keeping.

The Beaver Valley Power Station Health Physics Manual contains provisions for administration of the facility bioassay program. Emergency Implementing Procedures provide guidance for accelerated or additional bioassays in the event there are individuals who are suspected of being exposed to elevated levels of airborne activity as a result of the emergency. This bioassay consists primarily of lung and thyroid counts. These are supplemented by whole body counts and urinalysis when pre-determined lung and thyroid count screening levels, or pre-determined airborne activity exposure levels, are exceeded or suspect of being exceeded. These procedures provide for follow-up monitoring, medical treatment, and incident reporting.

.8 Respiratory Protection

The Beaver Valley Power Station Health Physics Manual (HPM) contains provisions governing the use of respiratory protection equipment and administration of the BVPS Respiratory Protection Program, which is responsive to Regulatory Guide 8.15 and NUREG-0041. The provisions of this document and supporting procedures shall apply to all usage of respiratory protection equipment during emergency conditions.

Three exceptions to normal respiratory protection practices may be authorized by the Emergency Director with the advice of the Radiological Controls Coordinator, in accordance with the provisions of Emergency Implementing Procedures. These exceptions are:

- Extension of normal uptake limits. Under these provisions, internal exposure is controlled such that the total dose commitment--due to internal and external exposure, does not exceed the emergency exposure limits established in Table 6.3.

- Use of Thyroid Prophylaxis. Potassium iodide is available for use by BVPS employees and contractors in the event of an emergency. This potassium iodide is only specified for use by emergency workers who must remain in affected areas, and for whom other means of respiratory protection are not available or are not practicable. Normally, potassium iodide will not be issued unless I-131 airborne activity in occupied areas would result in a thyroid CDE in excess of 25 REM. The use of thyroid prophylaxis by Site personnel is voluntary. Potassium iodide shall not be administered to non-emergency workers or to members of the general public by BVPS personnel, and is issued only at the direction of the Emergency Director.

- Use of Iodine Sorbent Canisters in Filter Respirators. During emergencies, iodine sorbent canisters may be used in filter respirators. If this is the case, the Radiological Controls Coordinator may recommend that BVPS petition the NRC for permission to assign protection factors for iodine sorbent canisters as specified in 10CFR20.

6.7.2 Offsite Protective Actions

The Nuclear Regulatory Commission has postulated (that in the event of a severe accident) protective actions may be necessary in a ten (10) mile radius Emergency Planning Zone (EPZ) around the Beaver Valley Power Station in order to minimize the exposure of the population to radioactive material in the plume. Under these conditions, it may also be necessary to monitor and control foodstocks and wildlife in a fifty (50) mile radius Ingestion Pathway Emergency Planning Zone. Both of these zones encompass areas with Pennsylvania, Ohio, and West Virginia. While there may be highly improbable accident sequences that would require extending these zones, the planning established for the ten (10) mile EPZ and the fifty (50) mile ingestion pathway planning zone provides an adequate basis for this expansion, should it be necessary.

To have the maximum effectiveness, the protective measures may require lead times before implementation, and with regard to evacuation, would require time to complete. Because of this, protective action decisions are based on the probability of a significant radioactivity release, as well as the existence of a current release. Under the worst postulated scenarios the time between event initiation and the occurrence of a significant release may be as little as thirty (30) minutes.

Although dose assessment methodologies are developed to a reasonable degree of accuracy, there are uncertainties involved with the input data to these assessments. It is unlikely that the release source term will be adequately quantified when the first protective action decisions are being made during a rapidly developing situation. Similarly, the meteorological conditions at the site may not be consistent with those a few miles from the site. These uncertainties, coupled with the need for rapid decisions in a fast breaking incident, and the significant lead time necessary to implement a protective action, has resulted in greater emphasis being placed on plant systems status assessments against pre-determined criteria, and lesser emphasis on dose assessments.

While it is appropriate that any protective action decision be discussed in conjunction with the three States and with the NRC, and while BVPS shall make reasonable efforts with these agencies to arrive at a common recommendation, in the absence of such an agreement the BVPS recommendation shall be based on the staff's best evaluation of the technical considerations involved, be the plant condition or dose assessment related, and will include only those geographical areas projected to be affected by the plume transport.

The state and local governments within the EPZ have developed emergency response plans for the protection of the general public in their jurisdictions. The role of the Beaver Valley Power Station in offsite protective actions is the notification of cognizant officials, performing accident assessments and apprising the offsite agencies, and making recommendations for offsite protective actions. The role of the local and state governments is to act upon the information and recommendations provided by the facility and to perform emergency measures necessary for the protection of the public.

The emergency preparedness plans of these jurisdictions are prepared and submitted to the Federal Emergency Management Agency and the Nuclear Regulatory Commission for review and approval. These documents should be consulted for detailed information on offsite protective actions. The following sections summarize the provisions for offsite protective actions in the BVPS EPZ.

.1 Protective Actions Within Beaver County, Pennsylvania. The responsibility for actions to protect offsite individuals rests with Beaver County government as described in the Beaver County Plan. The Beaver County Emergency Management Agency (BCEMA) is responsible for implementation of that plan.

The Pennsylvania Department of Environmental Protection/Bureau of Radiation Protection (DEP/BRP) is responsible for evaluating information obtained from the Beaver Valley Power Station and/or other sources and recommending appropriate offsite protective actions to BCEMA through the Pennsylvania Emergency Management Agency (PEMA). Such recommendations, based on all available data, local constrains and other considerations may include:

- Shelter for affected populations
- Evacuation within a specified radial distance and/or downwind sector

- Administration of thyroid prophylaxis (as approved by the State)

- Control of contaminated agricultural products

The principal offsite local coordinating agency for providing response to radiological emergencies in the vicinity of the Beaver Valley Power Station is the Beaver County Emergency Management Agency (BCEMA). Since the area and population inside the ten (10) mile emergency planning zone are partially within Columbiana County, Ohio and Hancock County, WVA; essentially parallel emergency response functions are provided by the coordinating agencies within those Counties. The implementation of protective actions within these areas are discussed in Sections 6.7.2.2 and 6.7.2.3. Upon notification by Beaver Valley Power Station or by PEMA of a situation, which may require protective actions for offsite populations, BCEMA will activate its emergency organization, and if required, will initiate appropriate actions in accordance with specific instructions from PEMA and the BCEMA emergency plans and procedures. If communication cannot be established with PEMA in the necessary time frame, BCEMA may implement limited protective actions with the concurrence of the County Commissioners on the basis of recommendations made by the BVPS Emergency Director (Emergency/Recovery Manager when EOF is activated).

- Providing assistance for evacuation of the County's population within the ten (10) mile emergency planning zone

- Identifying reception and mass care centers for individuals evacuated from Beaver County

Occupants within the ten (10) mile emergency planning zone of the Beaver Valley Power Station will be provided with information regarding emergency planning. This information will describe the method(s) by which they will be notified of an emergency and will provide specific instructions to follow upon receiving such notification. Additional discussion of the content and method of distribution of this information is contained in Section 8.

A detailed study has been conducted of the status and capacities of roads, traffic patterns, and demography within the ten (10) mile emergency planning zone. This study includes the estimated times to evacuate all or specific segments of the population, identifies potential problem areas

and provides contingencies for dealing with adverse conditions. This study was utilized in the development of detailed evacuation plans by BCEMA, CCEMA, and HCOEM. A summary of this study is presented in Appendix B. [C47]

The Ohio River, which flows within the exclusion area, is the source of water to communities and industrial facilities downstream. The closest water treatment facilities are at Midland, PA and East Liverpool, OH; less than 1 mile and approximately 5 miles down-stream, respectively. Additional water supply intakes are located 7 or more miles downstream. The minimum average flow in the river (Sept.) is approximately 5 million gallons per minute. In the event of an actual or projected release of radioactive material to the river, by any pathway, the Midland and East Liverpool water treatment companies may be notified and a recommendation made to secure water processing depending on the estimated or calculated river activity. If a water treatment plant is shutdown as a result of a recommendation by the BVPS Emergency Director, or by request of DEP/BRP (in the case of Midland), the decision to allow restarting those water treatment plants is the authority and responsibility of governmental agencies responsible for water purity in each of the three jurisdictions.

The Ohio River is navigable, and is routinely used for barge traffic. In the event of an emergency condition requiring protective actions within the BVPS exclusion area, the U.S. Coast Guard will be notified and requested to restrict vessels from entering affected areas. In addition, lockmasters at the New Cumberland Dam, located approximately 20 miles downstream; the Montgomery Dam, located approximately 3.3 miles upstream; and/or the Danshield Dam, located approximately 11.3 miles upstream; can be called upon to restrict access to affected areas on the river.

BCEMA has the capability and detailed plans for implementing protective actions in Beaver County, which include:

- Implementing prompt notification of the County's population within 10 miles of the Beaver Valley Power Station

- Transmitting specific instructions to the potentially affected populations

.2 Protective Actions Within Columbiana County, Ohio

The responsibility for actions to protect offsite individuals rests with the State of Ohio, as described in the State of Ohio Plan for Response to Radiation Emergencies at Licensed Nuclear Facilities. The Ohio EMA is responsible for implementation of that plan.

The State Department of Health is responsible for evaluating information obtained from the Beaver Valley Power Station and/or other sources and recommending appropriate offsite protective action to the Governor through Ohio EMA. Such recommendations, based on all available data, local constraints and other considerations may include:

- Shelter for affected populations
- Evacuation within a specified radial distance and/or downwind sector
- Administration of thyroid prophylaxis (for emergency workers only)
- Control for contaminated agricultural products

The principal offsite local coordinating agency for providing response to radiological emergencies in Columbiana County is the Columbiana County EMA. Upon notification by the BVPS Emergency Director or by BCEMA or by OEMA of a situation, which may require protective actions for offsite populations, CCEMA will initiate appropriate actions in accordance with specific instructions from the notifying party, and within the guidelines of the CCEMA emergency plans. If time permits, CCEMA will obtain a review and verification by OEMA of recommendations made by the BVPS Emergency Director. CCEMA has the capability and detailed plans for implementing protective actions similar to those for BCEMA described in Section 6.7.2.1 of this Plan.

.3 Protective Actions Within Hancock County, West Virginia

The responsibility for coordination of protective action recommendations rests with the State of West Virginia, as described in the West Virginia Emergency Disaster Plan, Volume Four, Response/Radiological Beaver Valley Power Station. The West Virginia Division of Homeland Security/Emergency Management (WVDHS/EM) is responsible for implementation of that plan. C47

The West Virginia Bureau For Public Health is responsible for evaluating information obtained from the Beaver Valley Power Station and/or other sources and recommending appropriate offsite protective actions to WVDHS/EM. Such recommendations, based on all available data, local constraints and other considerations may include: [C47]

- Shelter for affected populations
- Evacuation within a specified radial distance and/or downwind sector
- Administration of thyroid prophylaxis (for emergency workers only)
- Control of contaminated agricultural products

The principal offsite local coordinating agency for providing response to radiological emergencies in Hancock County is the Hancock County Office of Emergency Management. Upon notification by BVPS or by BCEMA or by WVDHS/EM of a situation, which may require protective actions for offsite populations, HCOEM will initiate appropriate actions in accordance with specific instructions from the notifying party, and within the guidelines of the HCOEM emergency plans. If time permits, HCOEM will obtain a review and verification by WVDHS/EM of recommendations made by the BVPS Emergency Director. HCOEM has the capability and detailed plans for implementing protective actions similar to those for BCEMA as described in Section 6.7.2.1 of this Plan. [C47]

.4 Public Warning System

The primary means for alerting and warning the population of an incident at the Beaver Valley Power Station is the Siren Warning System. [C29] This system involves alerting the population with sirens. In accordance with instructions provided by periodic public information programs (See Section 8.5), the alerted population will turn to Local Emergency Broadcasting radio or television stations for emergency information and instructions. Hardware has been provided for this public warning system within the plume exposure pathway EPZ. The design objective of this system is to have the capability to complete an initial notification of the public within the plume exposure pathway EPZ within about 15 minutes.

The hardware consists of fixed outdoor sirens located within the 10 mile EPZ.. The sirens will be activated remotely by radio from the emergency services office within the respective jurisdictions. [C29]

The responsibility for activation of the public warning system rests with the emergency services organization in each of the three risk counties. These organizations will activate their respective portions of the warning system and supply appropriate emergency messages to the Emergency Alert System (EAS) station serving their jurisdiction in accordance with the provisions of their emergency response plans. The control for these systems are located in the respective county emergency services offices. The Beaver Valley Power Station supplies information for these emergency messages in the form of the initial and follow-up notifications described in Section 6.4.1 and 6.4.2.

As a backup to the Siren Warning System, local fire and police personnel would perform house to house checks to ensure everyone has received the message. This Route Alerting System is described in Local and County Emergency Plans.

.5 Protective Action Guides and Recommendation of Protective Actions

A protective action guide is the projected radiological dose, or dose commitment, to individuals in the general public above which protective actions may be warranted following a significant release of radioactive material. Protective Action Guides (PAGs) have been established by the U.S. Environmental Protection Agency. These guides are specified for the population as a whole. The guides for dose commitment for the general public are:

General Public Protective Action Guides

TEDE (rem)	Child Thyroid (CDE) (rem)
1	5

As noted earlier, these guides are applied against projections of offsite dose, be they based on an ongoing release or a potential release. The plant system status indicators and the protective actions associated with each indicator, as provided in EPP/IP 4.1, "Offsite Protective Action," are based on the postulated offsite exposures associated with each condition and the protective action guides above.

- Protective actions such a sheltering or evacuation are mandatory in affected areas if projected offsite doses exceed the value of the protective action guide established above.

- Sheltering is an appropriate protective action for:

  Severe events in which evacuation cannot be implemented because of inadequate lead time due to rapid passage of the plume ("puff" release). Evacuation time estimates indicate that 3 hours are necessary to evacuate out to a five mile radius, and up to 7 hours out to 10 miles.[C34]

  When an evacuation is indicated, but local constraints, such as inclement weather, road conditions, etc., dictate that directing the public to seek shelter is a more feasible and effective protective measure than evacuation. Studies indicate that a normal wood structure that can be made reasonably snug can reduce the direct exposure to the plume by 10% and can minimize inhalation dose for about two-hours.

- Evacuation is an appropriate protective action for:

  An incident involving a release, or potential release, which is projected to result in an offsite dose greater than 1 rem TEDE, or 5 rem to the child thyroid (CDE), in situations where the lead time between declaration of the emergency and population relocation is compatible with plume movement, and in the absence of constraints to evacuation (inclement weather, etc.).

- Situations which do not provide for advance warnings, but for which substantial reductions in population dose can be made by avoiding exposure to residual radioactivity (plume fallout) in the wake of sudden severe incidents involving significant releases of radioiodine or particulate material. In these cases, sheltering should be maintained until the plume passes, if possible.

Offsite agencies responsible for implementing protective actions for the public will assign protective actions based on their evaluations and consideration of the BVPS recommendation. While the agencies in the three (3) jurisdictions will coordinate their respective actions with each other, the action taken in each jurisdiction is ultimately the prerogative of that jurisdiction.

The role of BVPS in offsite protective actions is to provide offsite agencies with timely notifications of emergencies, appropriate recommendations for protective actions, appropriate accident assessment data, and data from offsite monitoring performed by BVPS personnel in the event of a release; to provide a capability for warning the public in a timely manner; and to assist local officials with public information programs.

6.8 AID TO AFFECTED PERSONNEL

Established Emergency Plan Implementing Procedures, Operating Procedures, and Radiation Control Procedures provide for personnel decontamination and for assistance to injured persons including situations involving complications due to the presence of radiation or radioactive contamination.

6.8.1 Personnel Decontamination

The Beaver Valley Power Station Health Physics Manual identifies criteria and provides procedures for personnel decontamination. The provisions of the HPM and supporting procedures shall apply to emergency situations to the maximum extent possible. These procedures commence with simple washing with soap and water by the individual. If contamination is persistent, or involves significant amounts of contamination, particularly in the vicinity of facial openings, decontamination will be performed under the direction of radiation control personnel using established procedures.

Personnel decontamination areas, consisting of showers and sinks, which drain to the Liquid Radwaste System, are available within the Site for routine or emergency use. These facilities are located near the access to the controlled areas of the Site. Portable decontamination kits are maintained for use at remote assembly areas.

A listing of typical decontamination equipment located at the personnel decontamination areas is provided in Appendix D. Personnel having their personal clothing contaminated will be issued clean clothing as temporary replacement clothing.

In addition to decontamination within the Site, the Emergency Response Facility will provide a decontamination facility. Decontamination liquids are held-up in tanks for subsequent processing. In the interim, personnel decontamination will be performed prior to the departure from the Site, or at a designated location.

Normal contamination control limits expressed in the HPM shall remain in effect to the extent possible. However, the Radiation Control Coordinator, may modify the contamination control limits as provided in Emergency Implementing Procedures. Under site evacuation conditions, the level of removable contamination above which removable decontamination is mandatory is established as 5000 dpm/100 cm (500 cpm on HP210 detector), five times the normal control limit. No contamination limit applies to contaminated injured personnel needing immediate medical treatment at a hospital.

6.8.2 First Aid

At least two persons who are qualified in first aid methods shall be onsite at all times. The qualified individuals are trained in First Aid/CPR. First aid to injured personnel can normally be performed in conjunction with any necessary decontamination methods. However, if immediate treatment of the injury is vital, that treatment shall take precedence over decontamination. This philosophy also extends to offsite emergency medical assistance involving radioactive contamination. For that purpose, measures are established in the Operations and Health Manuals to ensure timely offsite medical treatment. First Aid Kits are available for use at several locations within the Site, and a medical facility is available.

6.8.3 Medical Transportation

Arrangements have been made for the transportation of injured personnel from the Beaver Valley Power Station, who may have injuries complicated with radioactive contamination or who may have been involved in a radiation incident, to a medical treatment facility. These organizations can be contacted directly or through the Beaver County Emergency Services Center.

Emergency Medical Services radio provides for communications between the Beaver County Emergency Services Center, the ambulances, and the Beaver County hospitals. Copies of the agreement(s) to provide emergency services from these organizations are on file in the Emergency Response Section. Ambulance emergency supply kits, which typically contain items shown in Appendix D, are available for use and are stored in the Medical Facility at the Site.

Ambulance personnel arriving at the Site are directed by security personnel to the appropriate area. Personnel dosimetry for ambulance personnel is provided by the Site. Contaminated patients are accompanied by radiation control personnel. The radiation control person is responsible for maintaining appropriate contamination control measures to minimize the contamination of the ambulance, the hospital, and hospital personnel. This individual is responsible for controlling contaminated material, and surveying the ambulance and the hospital treatment area following use.

If an ambulance can not be obtained in a reasonable period of time, a suitable BVPS vehicle, or employee vehicle (only on a voluntary basis), may be utilized to transport injured personnel.

6.8.4 Medical Treatment

Arrangements have been made for treatment of injured personnel from the Beaver Valley Power Station, who may have injuries complicated with radioactive contamination at:

- The Medical Center, Beaver, PA

Similar arrangements have been made for medical treatment of contamination injuries and significant over-exposures to radiation, and for evaluation of radioactive material uptakes at:

- Presbyterian-University Hospital

Evaluation of significant contamination injuries, over-exposures, and radioactive materials uptakes can be made by the Radiation Protection Department at BVPS. [C31]

The BVPS Health Services maintains a contract for a qualified physician. This physician has or will complete training through REAC/TS at Oak Ridge, TN, and can assist with clinical diagnosis and/or treatment of contaminated/injured or irradiated persons.

Copies of agreements to provide medical treatment from the above organizations are on file in the Emergency Response Section.

The Medical Center, and the Presbyterian-University Hospital are adequately supplied and equipped to receive and treat contaminated patients. Sets of contamination control supplies are provided at the Medical Center of Beaver County. A typical list of this equipment is shown in Appendix D.

6.9 EMERGENCY PUBLIC INFORMATION

First Energy Nuclear Operating Company respects the public's right to information about its operations and service and, in particular, information regarding accidents and unplanned events which occur at Company facilities, including the Beaver Valley Power Station. The Company's policy has and continues to be to make public, accurate information about these events.

The Emergency Public Information procedures describe the objectives, responsibilities, facilities, and protocol for emergency public information. Section 7 of this Plan describes the Joint Public Information Center (JPIC). Section 6.2.4.6 describes activation of the Joint Public Information Center and the Emergency Public Information Response staff.

The Joint Public Information Center, if activated, is the location from which replies to news media inquiries will be made, and at which news briefings will be held. If the situation warrants, news briefings may be held at other locations. The Beaver Valley Power Station will supply operational and technical information, upon request, to JPIC personnel via the onsite Emergency Public Information Response staff at the ERF. This individual shall have access to all information regarding the emergency. Senior management designated individuals will serve as Chief Company Spokesperson. [C31]

Space is provided at the Joint Public Information Center for State, local, and Federal public information personnel, and provisions are made for coordination of news announcements and press briefings.

As part of the Emergency Public Information procedures, telephone contact personnel respond during an emergency to handle incoming calls from members of the general public.[C31] In addition to other functions, these personnel will serve as the point of contact between the general public and BVPS. The purpose of this contact is to respond to concerns of the general public in an effort to suppress unfounded rumors and incorrect information which has not been answered by news announcements. In addition, the Emergency Public Information ERO provides an internal rumor control system to quell rumors to company employees and the news media.

INTENTIONALLY BLANK

TABLE 6.1
SUMMARY OF IMMEDIATE NOTIFICATION AND RESPONSE

EMERGENCY CLASS	CRITERIA	IMMEDIATE NOTIFICATIONS		IMMEDIATE ACTIONS	
		ONSITE	OFFSITE	ONSITE PERSONNEL	OFFSITE PERSONNEL
UNUSUAL EVENT	Off-normal Events Which By Themselves Do Not Constitute Significant Events. But Could Indicate a Potential Degradation in the Level of Safety of the Plant.	* Fire Brigade * Damage Control Teams * Surveillance Watches * First Aid Teams * Rescue Teams * Monitoring Teams * Security Force * Outage Contractors	* Fire Units * Rescue Assistance * Ambulance Assistance * Hospital * BCEMA * PEMA * OEMA * HCOEM C47 * CCEMA * WVDHS/EM C47 * NRC * FENOC Headquarters	* Make Prompt Offsite Notification * Fight fires * Perform emergency repairs * Designated Surveillance Functions * Administer First Aid * Conduct Rescue Operations * Perform Onsite Monitoring * Appropriate Security Measures * Perform Continuing Assessment * Make Prompt Onsite Notifications	* Provide Fire Fighting Assistance * Assist in rescue operations * Provide Medical Transportation * Provide Hospital Medical Treatment * Assist in Damage Control
ALERT	Events Which Indicate an Actual Degradation in the Level of Safety of the Plant	* Fire Brigade * Damage Control Teams * Monitoring Teams * Dose Projection Personnel * Security Force * Outage Contractors	* Fire Units * BCEMA * PEMA * OEMA * HCOEM C47 * CCEMA * WVDHS/EM C47 * NRC * FENOC Headquarters	* Make Prompt Offsite Notifications * Fight Fire * Perform Emergency Repairs * Onsite and Offsite Monitoring * Offsite Dose Projection * Approp. Security Measures * Augment Onshift Resources * Activate TSC, OSC, C15 Place EOF, JPIC on standby	* Provide Onsite Assist. as required * Activate Primary Response Centers * Alert Key Personnel to Standby * Conduct Confirmatory Dose Projections * Maintain Emergency Communications.

TABLE 6.1
SUMMARY OF IMMEDIATE NOTIFICATION AND RESPONSE

EMERGENCY CLASS	CRITERIA	IMMEDIATE NOTIFICATIONS		IMMEDIATE ACTIONS	
		ONSITE	OFFSITE	ONSITE PERSONNEL	OFFSITE PERSONNEL
SITE AREA EMERGENCY	Events Which Involve Actual or Likely Major Failures of Plant Functions Needed for Protection of the Public	* Appro. Emer. Teams * Security Force * All other station Personnel * Outage Contractors	* Appropriate Local Assist. * BCEMA * PEMA * OEMA * HCOEM C47 * CCEMA * WVDHS/EM C47 * NRC * FENOC Headquarters	* Make Prompt Offsite Notifications * Take Appro. Corrective Action * Onsite and Offsite Monitoring * Offsite Dose Projections * Appro. Security Measures * Augment Resources/Activate Emergency Centers * Personnel Evacuation as Approp. * Alert Total Emergency Org. * Perform Continuing Assess. * Activate EOF, JPIC	* Provide Onsite Assistance as required * Activate and Man Response Centers * Mobilize Emer. Response Personnel * Continuously Evaluate Dose Projections * Place Public Notification System and Procedures in Standby Status * Implement Appropriate Near-Site Emergency Protective Measures * Maintain Emergency Communications
GENERAL EMERGENCY	Events Which Involve Imminent Substantial Core Degradation or Melting With Potential for Loss of Containment Integrity	* Appropriate Emer. Teams * Security Force * All Other Station Personnel * Outage Contractors	* Appro. Local Assistance * BCEMA * PEMA * OEMA * HCOEM C47 * CCEMA * WVDHS/EM C47 * NRC * FENOC Headquarters	* Make Prompt Offsite Notif. * Take Appro. Corrective Actions * Onsite and Offsite Monitoring * Appro. Security Measures * Augment Resources/Activate Emergency Organization * Activate Total Emergency Organization * Personnel Evacuation as appropriate * Perform Continuing Assess. * Recommend Offsite Action	* Provide Onsite Assistance as required * Fully Staff Response Centers * Activate all Emergency Response Personnel * Implement Public Notif. Procedures * Continuously Evaluate Dose Projections * Implement Appro. Offsite Emer. Protective Measures * Maintain Emergency Communications

TABLE 6.2

NOTIFICATION MATRIX

ORGANIZATION	CONTACT		COMMUNICATION		24-HOUR COVERAGE	PURPOSE
	PRIMARY	ALTERNATE	PRIMARY	ALTERNATE		
BCEMA	DISPATCHER	BCEMA DIRECTOR	COMMERCIAL TELEPHONE SYSTEM	BVPS RADIO	YES	ACTIVATE BCEMA
PEMA DEP/BRP	DUTY OFFICER	BCEMA	COMMERCIAL TELEPHONE SYSTEM	BVPS RADIO VIA C2 BCEMA	YES	ACTIVATE PEMA VERIFICATION CALL
OEMA	DUTY OFFICER	OHIO HWY PATROL DISPATCHER	COMMERCIAL TELEPHONE SYSTEM	BVPS RADIO VIA C2 CCEMA	YES	ACTIVATE OEMA
WVDHS/EM C47	DISPATCHER	HCOEM C47 DISPATCHER	COMMERCIAL TELEPHONE SYSTEM	BVPS RADIO VIA C2 HCOEM C47	YES	ACTIVATE WVDHS/EM C47
CCEMA	DISPATCHER	CCEMA DIRECTOR	COMMERCIAL TELEPHONE SYSTEM	BVPS RADIO	YES	ACTIVATE CCEMA
HCOEM C47	DISPATCHER	C47 HCOEM DISPATCHER	COMMERCIAL TELEPHONE SYSTEM	BVPS RADIO	YES	ACTIVATE HCOEM C47
NRC	DUTY OFFICER	N/A	NRC/ENS (RED PHONE)	TELEPHONE	YES	ACTIVATE FEDERAL RESPONSE
FIRE DEPTS	BCEMA DISPATCHER	N/A	COMMERCIAL TELEPHONE SYSTEM	BVPS RADIO	YES	FIRE ASSISTANCE
AMBULANCES	BCEMA DISPATCHER	AMBULANCE COMPANY	COMMERCIAL TELEPHONE SYSTEM	BVPS RADIO	YES	MEDICAL TRANSPORTATION
HOSPITALS	EMERGENCY ROOM	BCEMA DISPATCHER	COMMERCIAL TELEPHONE SYSTEM	BVPS RADIO	YES	MEDICAL TREATMENT

INTENTIONALLY BLANK

EMERGENCY EXPOSURE CRITERIA TABLE 6.3

Dose to workers performing emergency services should not exceed the following recommendations of the EPA Manual of Protective Action Guides and Protective actions for Nuclear Incidents (EPA 400-R-92-001).

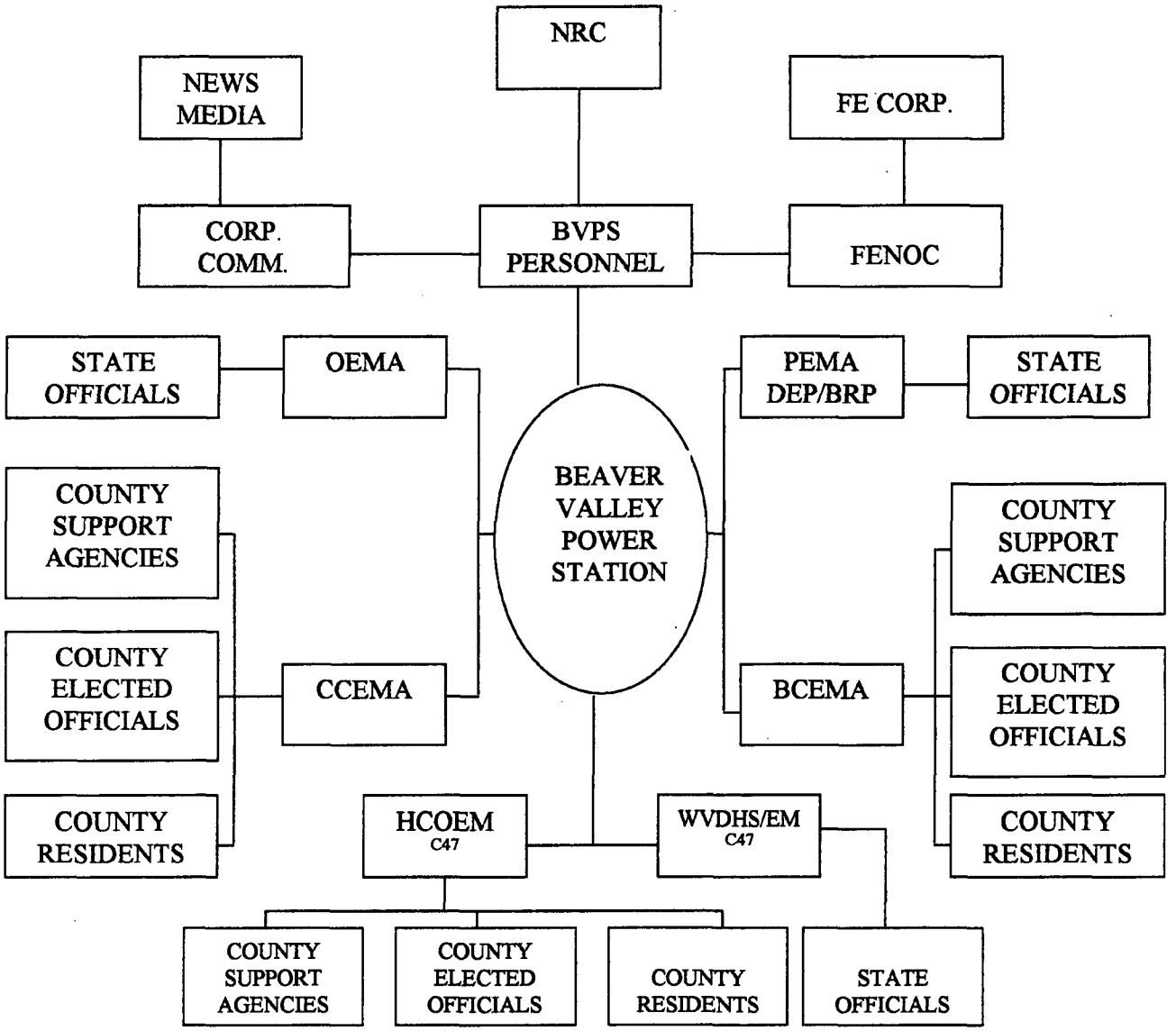
Dose Limit (a) (rem)	Activity	Condition
5	All	
10	Protecting valuable property	Lower dose not practicable
25	Life saving or protection of large populations	Lower Dose not practicable
>25	Life saving or protection of large populations	Only on a voluntary basis to persons fully aware of the risks involved

(a) Sum of external effective dose equivalent and committed effective dose equivalent to nonpregnant adults from exposure and intake during an emergency situation. Workers performing services during emergencies should limit dose to the lens of the eye to three times the listed value and doses to any other organ (including skin and body extremities) to ten times the listed value. These limits apply to all doses from an incident, except those received in unrestricted areas as members of the public during the intermediate phase of the incident.

- The BVPS Emergency Director must approve all planned emergency exposures. The Radiological Controls Coordinator should be consulted prior to authorizing the planned emergency exposure, if time permits.
- All reasonable measures must be taken to control contamination and internal exposure.
- Persons performing emergency activities should be familiar with the consequences of the exposure.
- Persons performing emergency activities under these provisions should be volunteers.
- Personnel shall not enter any area where dose rates are unknown or unmeasurable with instruments and dosimetry immediately available.

INTENTIONALLY BLANK

FIG. 6.1
PRIMARY INITIAL NOTIFICATIONS



INTENTIONALLY BLANK

SECTION 7

EMERGENCY FACILITIES AND EQUIPMENT

Section 7

EMERGENCY FACILITIES AND EQUIPMENT

Table of Contents

Section 7

EMERGENCY FACILITIES AND EQUIPMENT

Table of Contents

Section 7

EMERGENCY FACILITIES AND EQUIPMENT

Table of Contents

7.0 EMERGENCY FACILITIES AND EQUIPMENT

Emergency facilities and equipment are provided at the Beaver Valley Power Station to ensure the capabilities for prompt, efficient assessment and control of situations over the entire spectrum of probable and postulated emergency conditions. The facilities and associated equipment, and their emergency functions, are described in this section.

7.1 ONSITE EMERGENCY CENTERS

Onsite emergency facilities at the Beaver Valley Power Station are described in this section. The Technical Support Center and the Emergency Operations Facility are located in the Emergency Response Facility (ERF) located approximately 1200 feet from the Beaver Valley Power Station Control Rooms. The significant instrumentation and communications available at each of the BVPS emergency facilities are listed in the Implementing Procedures.

7.1.1 Control Room

The Control Room is the primary location for the assessment and coordination of corrective actions for essentially all emergency conditions. The Control Room is equipped with the readout and controls for all critical plant systems, the readout and assessment aids related to radiological and meteorological monitoring systems, and access to all station communications systems.

The Control Room is initially the primary location for accident management and emergency communications until the Technical Support Center is activated. Located within the Control Room are telephone and radio communications equipment and emergency equipment and supplies necessary to support direction and coordination of emergency response activities.

The Control Room provides for the effective coordination of the following emergency response functions:

- Plant assessment and coordination of corrective actions
- Requesting initial call out of emergency response personnel
- Perform notifications to offsite government agencies
- Requesting offsite dose projections be initiated and directions provided for offsite monitoring until the TSC/EOF is activated

- Communicate with other onsite/offsite Emergency Operations Centers
- Serve as the central location for the receipt of data from radiological monitoring (until the TSC/EOF is activated) and other emergency teams
- Provide direction to emergency coordinators
- Make recommendations to offsite agencies regarding protective and other actions (until relieved by TSC/EOF)
- Provide administrative direction (until relieved by TSC/EOF)

7.1.2 Operations Support Center

The Operations Support Center (OSC) provides for assembly of Operations support personnel for supplemental emergency team personnel. The location of the OSC is the Outage Central Area[C15] located above the BVPS Control Rooms. This area has communications capability with the Control Room and the BVPS Site. Protective equipment for personnel assigned to the OSC is available in emergency cabinets in the OSC and at the Plant Health Physics Check Area, located adjacent to the access to the controlled area.

The OSC is equipped with the Radcon and Operations circuits, the site page party system and PAX/Commercial phone system capabilities.

The OSC is designated as a central location for coordinating the activities of radcon technicians for both BVPS units. Wall maps are provided for maintaining the status of radiological conditions within the Station.

If the nature of the emergency renders the OSC unusable due to radiological conditions, etc., OSC operations are co-located to the Alternate OSC.

The Alternate OSC is located in the Process Instrument and Rod Position Instrument Area below the Unit 1 Control Room. This area has the same shielding and ventilation features as the Control Room and the same communications capabilities as the OSC. The BV-1 remote shutdown panel is located in this area.[C15]

7.1.3 Emergency Response Facility

The Emergency Response Facility has been designed to satisfy the functional requirements of the Technical Support Center and the Emergency Operations Facility. The design of the building enhances the proper control and coordination of the principle emergency response activities without interfering with plant emergency operations. The facility provides for the following:

.1 Technical Support Center

The TSC provides for engineering and management support during emergency situations and has the following features:

a) Reasonably close proximity of the Control Room

b) Capability to display real-time plant status data

An Inplant Process Computer performs data acquisition, trending, alarm reporting, logging, CRT displays, data storage and various human communication functions to provide for the monitoring of plant variables in the Control Room.

The Safety Parameter Display System (SPDS), provides a display of plant parameters from which the safety status of operations may be assessed. The SPDS will help operating personnel make quick assessments of plant safety status and improve the exchange of information between TSC, EOF and Control Room.

c) Dedicated communications links to Control Room and NRC

A dedicated line system is provided between the Control Room and the TSC.[C31] This system is powered by emergency power. A base station for the BVPS Industrial Radio System is also provided. This base station has its own transmitter and antenna and can communicate (via the BVPS repeater) with all units. Emergency Telephone System (ETS) extension for contacting the NRC/ENS and HPN are available, as is PAX and Commercial system telephones.

d) As-built drawings are maintained within the building

e) Environmental Assessment and Dose Projection capability

An environmental assessment and dose projection area, located in the EOF area, provides the capability to perform dose projection and offsite radiological assessment functions. A terminal to the meteorological computer provides 15-minute average print-outs of meteorological parameters. An Atmosphere Radiological Effluent Release Assessment System (ARERAS) computer system will provide data needed for determination of meteorological conditions in the vicinity of BVPS and capability to access and monitor actual or potential offsite consequences of a release during a radiological condition. NRC/HPN, BVPS radio transceiver, and extensions to the DEP/BRP hotlines are available.

.2 Emergency Operations Facility

In the Emergency Response Facility, an Emergency Operations Facility is established for the Beaver Valley Power Station. Although separate, the EOF is located in the same building as the Technical Support Center (TSC). There is adequate desk space for 50 or more people, including desk space for State representatives. Telephones are provided. The nearsite EOF shares an environmental assessment and dose projection area with the Technical Support Center. When the EOF is activated, the EA&DP area becomes a part of the EOF. In the event this area is uninhabitable, the nearsite EOF may relocate with the TSC. In the event the ERF is uninhabitable, the nearsite EOF will relocate to the Alternate EOF which shares a building with the JPIC on Spring Run Road in Coraopolis, PA. The EOF will serve as the location from which the overall BVPS response will be directed and coordinated; and as a coordinating center for utility, Federal, State and local agencies. BVPS management personnel at this facility provide an interface with the Technical Support Center.

The Coraopolis facility provides adequate desk space for 12 individuals with overflow space for approximately 25 additional personnel. There are direct Commercial telephone lines, FAX units, PAX lines, and an operating console for the BVPS Industrial Radio System and an ERDS Terminal. The alternate EOF is located on Spring Run Road in Coraopolis, PA.

.3 Dosimetry Laboratory

A shielded dosimetry lab is provided with sufficient TLD availability to serve the needs of all Station personnel. Whole body counting facilities are located adjacent to the ERF.

.4 Sample Preparation and Counting Facilities

Shielded sample preparation areas are provided. Counting equipment include a gamma spectrometry system.

.5 Nuclear Regulatory Commission

Provisions have been made in the ERF to accommodate the complete NRC Site Team Organization. These provisions include desk space, communications capabilities and a conference room.

.6 Decontamination Facility

A decontamination facility is provided. This facility is intended for the use of ERF personnel. (Reserve portable survey instruments will be maintained here.)

.7 Other

- Kitchen
- Rest rooms and sleeping areas (for men and women)
- Medical Services
- Security and reception areas
- Records room

Increased shielding is provided for the EOF and the dosimetry/sample laboratories. Ventilation will be such that intake air flow can be diverted through high efficiency particulate (HEPA) filters and if necessary, charcoal filters. An emergency diesel generator, with an approximate 180-hour fuel supply, is provided for back-up power. Important instrumentation and communications equipment are powered by UPS and battery. Appropriate communications from the ERF to the Control Room, Onsite Response Facilities, and offsite agency Emergency Operations Centers, are provided.

7.1.4 Joint Public Information Center (JPIC)

The Joint Public Information Center (JPIC) will serve as the focal point for all Nuclear Communications activities. All media communications by First Energy personnel, including press conferences, will be coordinated through the JPIC. The location of the JPIC is in the Pittsburgh Airport Business Park, Spring Run Road, Coraopolis, PA. This facility provides working space for the press and for First Energy Communications personnel. A briefing area to seat 300 persons is available. Adequate parking for cars and trailers is available.

The Implementing Procedures provides for activation and operation of this facility. If the facility is unavailable due to radiological conditions, the activities of the JPIC will be transferred to the Corporate Headquarters.

7.2 EMERGENCY SUPPLIES

Emergency supplies are located at onsite and offsite locations to provide a ready supply of equipment and material necessary to meet the short-term needs for performing emergency functions. The emergency supplies include portable communication equipment, protective equipment, monitoring equipment, and applicable procedures. Additional, and/or replacement equipment and materials are available at the Station, or can be readily obtained from offsite sources to support longer term emergency measures or the recovery effort. Appendix D provides a typical inventory by general category.

In addition, BVPS maintains an inventory of contamination control material at The Medical Center, Beaver for minimizing the spread of contamination while handling contaminated injured personnel.

The emergency kits are inspected and inventoried at least quarterly and after each use.

7.3 COUNTY AND STATE EMERGENCY CENTERS

7.3.1 County Emergency Centers

The 10-mile emergency planning zone for the Beaver Valley Power Station includes areas and populations in Beaver County, PA; Columbiana County, OH; and Hancock County, WVA. Each of these county jurisdictions has Emergency Operations Centers, which meet or exceed the minimum Federal criteria for sufficient space, communications, warning systems, and self-sufficiency in supplies and accommodations. All three counties maintain employees to coordinate emergency planning and execution, and have made provision for 24-hour per day communications coverage.

Location of the county Emergency Operations Centers are:

- Beaver County Emergency Operations Center
  Beaver County Emergency Management Agency
  Beaver County Emergency Services Center
  250 East End Avenue
  Beaver, Pennsylvania

- Columbiana County Emergency Operations Center
  Columbiana County Emergency Management Agency
  215 South Market Street
  Lisbon, Ohio

- Hancock County Emergency Operations Center
  Hancock County Office of Emergency Management [C47]
  Hancock County Court House
  102 Court Street
  New Cumberland, West Virginia

7.3.2 State Emergency Operations Center

The 10-mile Emergency Planning Zone (EPZ) for the Beaver Valley Power Station includes areas and populations in Pennsylvania, Ohio, and West Virginia. All of the states maintain full-time employees to coordinate emergency planning and execution, and have made provision for 24-hour per day communications coverage.

The Pennsylvania Emergency Operations Center is located at the PEMA headquarters in Harrisburg, PA. This center is equipped with a reliable communications system, which ties all area and county emergency operations centers with PEMA headquarters. During an emergency, the State will assemble at the State Emergency Operations Center to manage and support the emergency response activities.

The Ohio Emergency Operations Center is located at the Ohio Emergency Management Agency headquarters in Worthington, Ohio (near Columbus). This center is equipped with extensive communications capability, which ties all area and county emergency operations centers with the OEMA headquarters. During an emergency, representatives from designated State agencies will assemble at the State Emergency Operations Center to manage and support the emergency response activities.

The West Virginia Emergency Operations Center is located in the East Wing, main Capital Building, in Charleston, West Virginia. An integral Emergency Communications center provides communication support for the emergency response effort. Communications and warning links connect all area and county emergency operations centers with the State EOC. During an emergency, the State EOC is staffed by personnel from each of the major State departments and agencies.

7.4 ASSESSMENT FACILITIES

The primary emergency assessment facility is the site Control Room. Supplementary and complimentary assessment functions are performed in the TSC. This section discusses the assessment facilities provided for both initial and continuing assessment of emergency conditions.

7.4.1 Radiological Monitors

Radiological monitoring equipment has been provided at the Beaver Valley Power Station for the detection and assessment of emergency conditions. Radiological monitors include the process, effluent, and area radiation monitors included in the Radiation Monitoring System; portable radiation, contamination, and airborne activity sampling and measuring equipment; radiological laboratory equipment; radiological environmental monitors; and accident monitors. These monitors are summarized below. More detailed information is found in the BVPS Final Safety Analysis Report (FSAR), the BVPS Health Physics Manual, the BVPS Operating Manual, and Appendix D to this Plan.

.1 Radiation Monitoring System/Digital Radiation Monitoring System - This onsite system, consisting of effluent monitors, continuous air monitors, area radiation monitors, and process monitors, contributes to personnel protection, equipment monitoring and accident assessment by measuring and recording radiation levels and concentrations of radioactive material at strategically selected locations throughout the station.

Each potential radioactivity release path has been provided with appropriate radiation monitors. These monitors, which provide for radioactivity detection and measurement during normal operations, are tabulated in Appendix D.

.2 Portable Instrumentation

Portable radiological sampling and measuring equipment is provided as part of the Beaver Valley Power Station Radiation Controls Program, as established in the BVPS Health Physics Manual. Appropriate gamma survey instruments, contamination monitoring equipment, and air sampling equipment are reserved in emergency kits for emergency use. With few exceptions, this equipment is battery operated. The reserved equipment is supplemented by the instruments provided for routine use. Appendix D tabulates, by type, the instruments available. The selection of instruments and sampling media, and the methodology established in Emergency Implementing Procedures, provides for a minimum field detection capability of at least 1 E-7 uCi/cc of Iodine-131 in the presence of radioactive noble gases.

.3 Radiological Laboratory Equipment

Appropriate radiological counting equipment is provided in support of routine operations. This equipment is available for use during emergencies. Equipment includes, beta counter, liquid scintillation counters, and gamma spectrometers.

Laboratory support from outside the Site can be requested through the Brookhaven D.O.E. Bettis Atomic Power Labs, located approximately one hour away by car is the nearest D.O.E. facility.[C1] A laboratory is included in the Emergency Response Facility.

Laboratory support for environmental sample analyses are available from the environmental contractor. [C31]

.4 Environmental Monitors

The primary functions of the environmental radiological monitoring program are to establish the pre-operational background levels, detect any gradual build-up of long-lived radionuclides and verify that operation of the plant has no detrimental effect on the health and safety of the public or the environment. Field thermoluminescent dosimeters (TLDs) and sampling media from environmental monitoring locations may, however, be utilized to obtain valuable assessment data in the event of an accident involving the release of a significant amount of radioactive material.

.5 Accident Monitors

Several radiological monitors have been provided for assessment of radiological conditions or radiological release rates in the wake of a significant accident. These monitors generally supplement the monitors in the Radiation Monitoring System by extending the range of radiation measurements. Such monitors are provided for each of the major radioactivity release paths to the atmosphere and in the Containment Building. The range of the effluent monitors is about 1 E-7 to 1 E5 uCi/cc (Xe-133), and the range of the Containment area radiation monitor is about 1 R/hour to 1 E7 R/hour.

7.4.2 Fire Detection Systems

Fire protection at the Beaver Valley Power Station is provided by a complete network of fire suppression and extinguishing systems. These systems include a central alarm system (with an annunciator panel located in the Control Rooms) which is activated by a variety of fire and smoke detection devices which are located throughout the plant. Although the suppression and extinguishing systems for BV-2 are similar to BV-1 they are not identical. These fire detection systems are identified in the BVPS Fire Protection Plans.

7.4.3 Geophysical Phenomena Monitors

Monitors are provided for detecting and recording geophysical phenomena parameters related to meteorology and seismic events.

.1 Meteorology

The Beaver Valley Power Station maintains an onsite Meteorological Measurements Program. This program is comprised of equipment and procedures which provide for indication and recording of meteorological measurements necessary to perform dose projections based on atmospheric dispersion of a radioactivity release from the station. Meteorological sensors are provided on a meteorology tower located near the site to measure and record the following parameters:

- Wind direction at three altitudes
- Wind speed at three altitudes
- Vertical temperature difference
- Ambient temperature
- Precipitation

There are two (2) redundant trains of sensors located on this tower. The output from the two sets of sensors is processed and recorded (chart recorders) by instrumentation in a shelter located near the tower. Two redundant communication links transmit the processed data to the Atmospheric Radioactivity Effluent Release Assessment System (ARERAS) located in the Emergency Response Facility. ARERAS samples the parameters every five (5) seconds and calculates and records an average value every fifteen (15) minutes and once every hour. A minimum of one (1) month of historical hourly data and two (2) weeks of historical quarter hour data is available online at any time. This data is available on request at any ARERAS terminal and is accessed by the MIDAS dose projection software. The MIDAS/ARERAS system provides the States with the capability to receive meteorological data via dial-up modems.

The instrumentation in the meteorological shelter and the tower sensors have an automatic backup power supply. ARERAS is powered by the Emergency Response Facility uninterruptible power supply (UPS). Backup meteorological information is available through the National Weather Service.

.2 Seismic Equipment

Appropriate seismic instrumentation is provided at the Station to monitor and record the motion and peak shock imparted to critical elements of the Station (structures and components) due to an earthquake. Alarms are provided for peak accelerations and mechanical/electrical devices record the extent of the acceleration for subsequent evaluation to determine if maximum allowable accelerations have been exceeded and if any plant corrective actions are necessary.

The seismic instrumentation is categorized into three separate subsystems:

- The Triaxial Time History Accelographs

  This system is continuously energized in standby. A triaxial acceleration switch activates recording equipment and sounds an annunciator in the Control Room at an acceleration of 0.01 g. Three independent triaxial sensors are provided--two in the containment, and one in the Auxiliary Building.

  In the event of a system activation, the operator will obtain and assess the results from the recorders using the BVPS Operating Manual. Both units are AC powered and have internal batteries.

- Peak Shock Recorders (Triaxial Spectrum Recorders)

  Three passive triaxial recorders are provided. One is located in the containment, the others are located in the Control Room and in the Auxiliary Building. The containment recorder provides trigger switches which activate annunciators located in the Control Room, at accelerations equivalent to 70% of the Operational Basis Earthquake (OBE) and 100% OBE. These sensors record the peak shock by reeds which scribe a metal plate. Each sensor contains several reeds of different resonant frequencies to provide for spectrum analysis.

- Peak Recording Accelerometers

  Four peak recording triaxial accelerometers are provided--three in the containment and one in the Auxiliary Building. These units record the peak acceleration by the erasure of prerecorded lines on a small piece of magnetic tape. The tape is prepared for visual evaluation by a chemical process.

.3 Hydrologic Data

Data on the river flow in the Ohio River is available from two sources. The Lockmaster at the Montgomery Dam, located upriver in Industry, PA., is the primary source. The US Army Corps of Engineers provide 24-hour coverage at this location. The National Weather Service, River Forecasting Section, Pittsburgh is a source of river flow data during normal work hours, and during emergency periods of high river levels.

7.4.4 Process Monitoring Equipment

Process monitoring instrumentation is provided in the Station Control Rooms to provide the operator with necessary data on plant status to operate the plant under normal and emergency situations. This instrumentation generally includes instruments that:

- Provide information required to take pre-planned manual actions.
- Provide information to monitor the process of accomplishing critical safety functions.
- Indicate the potential for damage, or actual damage, to fission product barriers.
- Indicate the effectiveness of individual safety systems.
- Provide information for use in determining the magnitude of the release of radioactive materials, as described in Section 7.4.1.

In addition to the instrumentation described above, additional process parameter instrumentation systems are installed. These systems are the Safety Parameter Display System (SPDS) Computer, and the Inplant Process Computer (IPC) and Plant Safety Monitoring System (PSMS).

.1 Safety Parameter Display System

The Safety Parameter Display Systems (SPDS) provide displays of essential plant parameters from which the safety status of operations may be assessed. The primary function of the SPDS is to help Control Room personnel make quick assessments of plant safety. Displays for this system are provided in the BVPS Control Rooms and the Technical Support Center (TSC). The display in the TSC serves both the TSC and the Emergency Operations Facility (EOF).

.2 Inplant Process Computer and Bypassed & Inoperable Status Indication System

The Inplant Process Computer (IPC) is designed to obtain data from the reactor control, reactor protection, the environmental monitor racks, and other transducers in the plant and provide access to these indications in the Technical Support Center (TSC), the Emergency Operations Facility (EOF) and in the Control Room. The Bypassed & Inoperable Status Indication (BISI) System provides an indication in the Control Room of bypassed or inoperable equipment in the facility to assist the operators in operating the plant.

.3 The Plant Safety Monitoring System (PSMS) is located in Unit 2 Control Room. The PSMS will monitor plant conditions such as incore thermocouples, rod positions, Reactor vessel water level, etc.

7.4.5 Post Accident Sampling[C20]

Beaver Valley Power Station has Contingency Plans for obtaining and analyzing highly radioactive samples of reactor coolant, containment sump, and containment atmosphere in the event of a radiological accident. These Contingency Plans are maintained in the BVPS Chemistry Manual.

7.4.6 Emergency Response Data System (ERDS)

The BVPS Emergency Response Data System (ERDS) collects and transmits data as specified by the Nuclear Regulatory Commission (NRC). The system is tested for both Units 1 and 2 on a schedule specified by the NRC.

7.5 PROTECTIVE FACILITIES

Facilities and designated assembly locations are provided which ensure adequate radiological protection for personnel assigned to emergency duties in the plant, and for the accommodation of other personnel evacuated from areas that may be affected by radiation and/or airborne radioactivity.

7.5.1 Station Control Rooms

In addition to serving as the first-line control for emergency situations, the station Control Rooms have the following features which provide protection for personnel who may have emergency or operational duties throughout the course of any emergency:

- Adequate shielding by concrete walls to permit continuous occupancy under severe accident conditions
- An independent emergency air supply system, equipped with absolute and activated charcoal filters
- Continuous monitoring of radiation levels in the Control Room and throughout the plant by the RMS/DRMS system, with readout in the Control Room
- Emergency lighting and power, supplied by a 125 V DC system
- Basic protection equipment for emergency teams (Appendix D), and listings of emergency supplies/equipment, and their locations within the station
- Communications systems, as described in Section 7.6

7.5.2 Site Assembly Areas

Specific locations are designated for assembly of personnel at the site in the event of a Site Assembly or a Site Accountability. These areas provide space to accommodate all personnel who may be at the station. They are located on the basis of logical access routes and physical separation from likely areas of radiation and/or airborne radioactivity. The locations and the individuals assigned are:

.1 Primary Assembly Area (Unit 1 Service Building-Locker Room Area, South Office Shops Building - Locker Room Area and Nuclear Construction Office and Shops)

Personnel without emergency assignments within the BVPS protected areas will report to these areas. This includes BVPS employees, visitors, and contractor groups not covered by a specific evacuation plan. The responsibility to ensure that a visitor reports to the proper area is that of the individual accompanying the visitor at the time evacuation occurs.

.2 Unit 1/Unit 2 Contractor Personnel

Construction and contractor personnel are covered by the BVPS procedures, which provides instructions for assembly, accountability and evacuation. Personnel are instructed on these areas upon arrival at the BVPS site.

.3 Personnel Access Facility

Members of the Security Section assemble in accordance with the Beaver Valley Power Station Security Procedures.

.4 Training Building and other out-buildings designated in the Implementing Procedures. [C19, C25]

These buildings are located outside of the protected area. Personnel and visitors outside of the Unit 1-2 protected areas, will assemble in these buildings and await further instructions.

7.5.3 Remote Assembly Areas

These areas are designated for assembly of personnel from within the site in the event of a Site Evacuation. The locations are the Beaver County Community College Golden Dome and the Hookstown Grange. The Beaver County Community College Golden Dome is located approximately 9.8 miles from the site in the SE sector. The Hookstown Grange is located approximately 3.5 miles from the site in the SW sector. There are telephone links between each of these locations and the Control Room/TSC/EOF. [C48]

The BVPS Emergency Director will direct personnel to the appropriate area based on the direction of plume travel. If, based on radiological measurements at the Remote Assembly Areas and/or data from the Control Room, neither of these locations is deemed by the BVPS Emergency Director to be appropriate, the BVPS Emergency Director in cooperation with management and State and county agencies will direct personnel to another location.

Since accountability and radiological monitoring would be performed prior to exiting the site, no provisions are made for inclement weather. If weather conditions make use of the facilities impracticable, evacuated personnel will be sent home (or to their assigned Mass Care Center, identified in the county emergency plans). In cases of extreme weather conditions, non-essential Site personnel would be sent home prior to roads becoming impassable, and thus would not be onsite when the emergency was declared.

7.6 COMMUNICATIONS SYSTEMS

Communications are essential for effective activation and implementation of the Emergency Preparedness Plan. Beaver Valley Power Station has five independent systems for outside communication to Federal, state, county authorities, to corporate management, and to offsite support groups. These systems are the Commercial telephone system, the PAX system, the dedicated "hot lines", the Beaver Valley Emergency Response System and the Industrial Radio System. Onsite, the plant alarm system and the Station paging system provides communication/notification for Site personnel. Radio contact with the State agencies is via relay through their respective County[C2].

These multiple systems and redundancies ensure the performance of vital functions in transmitting and receiving information throughout the course of the emergency. Systems available at the various emergency facility locations are:

7.6.1 Commercial Telephone System

The Beaver Valley Power Station site is provided with telephone service by Verizon. All lines entering the site are direct connections with the telephone exchange (724-643/682) in Midland, (724-775) Rochester or (330-315) in Akron, Ohio. There are numerous direct lines, all of which can be used simultaneously. Power supply redundancy is provided for by emergency power supplies.

Emergency facilities served by direct lines:

- Control Rooms
- Technical Support Center (TSC)
- Emergency Operations Facility (EOF) and Alternate EOF
- BVPS Unit 1/2

The Commercial systems are routinely used by station personnel performing routine station activities, thus, periodic testing is not necessary.

7.6.2 PAX System

The PAX System includes automatic switchboards in the SOSB and the ERF. These switchboards are connected to each other and connected via T1 carrier and fiber optic trunks to a digital switchboard at Akron, Ohio which in turn is connected to the public telephone network as well as to other switchboards. The ERF and SOSB switchboards also has direct trunks to the public telephone network.

The PAX System has Direct Inward Dial capability for all telephone lines connected to any of the Company switchboards (724-682-xxxx). These telephone lines also have the capability of calling any other telephone line on the PAX System as well as Direct Dial calling anywhere on the public telephone network.

The PAX systems are routinely used by shift operations personnel performing routine station activities, thus periodic testing is not necessary. Alternate EOF phones shall be checked quarterly.

7.6.3 "Hot Lines" to DEP/BRP and NRC Communications

A separate and completely independent telephone "hot line" system provides direct communications with the Pennsylvania Department of Environmental Protection/Bureau of Radiation Protection (DEP/BRP).

The DEP/BRP "blue hotline" located in the EA & DP area of the ERF is used to provide radiological data. The DEP/BRP "White Hot Line" is located in the Control Room and is used to provide technical data. The DEP/BRP does not have 24-hour per day coverage on this circuit, but will activate the DEP/BRP staff upon notification from PEMA that an event has occurred. This phone is tested monthly.

The ENS (Emergency Notification System) is used to make the initial notification of an emergency declaration as well as providing ongoing information on plant status, systems and parameters to the NRC. The Emergency Telephone System (ETS) is a designated set of phones on the commercial phone system that **DOES NOT** go through either of the Beaver Valley Phone Switches but goes directly to Akron, Ohio for switching. This is to meet the requirements for dissimilar vulnerability to assure contact with the NRC during a declared emergency at Beaver Valley Power Station should the local phone switches become overloaded. The ETS operates in the same manner as the commercial phone systems when placing a long distance call. Simply lift the receiver, wait for a dial tone and dial "9" then "1" before dialing the ten digit phone number. ENS phones are located in the following locations:

- Control Room – Communications Console in the Administrative Assistant Area [C31]
- Control Room – Unit 1 Communications Console [C31]
- Technical Support Center
- Emergency Operations Facility
- NRC EOC

The HPN (Health Physics Network) phone, utilized to communicate radiological and meteorological conditions to the NRC, is also accessed by the ETS. These phones are located at:

- Operations Support Center
- Emergency Operations Facility (EA & DP Area)
- Technical Support Center (Rad Con Coord.)
- NRC EOC

Other phones associated with the ETS and dedicated to NRC Communications are located in the ERF and are described as follows:

- Reactor Safety Counterpart Link (RSCL)
- Protective Measures Counterpart Link (PMCL)
- Emergency Response Data System (ERDS) Channels (2) (Data transmission only)
- Management Counterpart Link (MCL)
- Local Area Network (LAN) Access

The Control Room ENS phone is tested daily, while the others are tested monthly.

7.6.4 Beaver Valley Power Station Industrial Radio

BVPS operates a radio communications network on two frequency bands. [C36] This service is used by BVPS, the DLC Power Stations Department, and other corporate groups. Tone-operated squelch prevents standby emergency stations from receiving routine operational transmissions.

There are six fixed base station transceivers associated with Beaver Valley Power Station (there are others serving other divisions within DLC). [C36] These are located at:

- Columbiana County Communications Center (CCEMA)

There are operating consoles for this base station located at the Sheriff's Dispatcher, the Ohio Highway Patrol, and at CCEMA.

- Hancock County Communication Center (HCOEM) [C47]
- Pennsylvania State Police
- Remote Relay Station on Shippingport hill SW from BVPS
- Beaver County Emergency Services Center
- Community College of Beaver County

The remote relay station is operated from the Control Room SM communications console via a UHF radio link or a dedicated telephone line. This station has power redundancy supplied by batteries connected to a battery charger. Remote consoles are located at:

- US area in the Control Room (BV-1) (Both frequencies)
- U1 Plant Shutdown Panel
- U2 Plant Shutdown Panel
- Control Room Office (shared BV 1-2) (Both frequencies)
- EA and DP Area (ERF) [C36]
- TSC - Radiological Controls Area [C36]
- Alternate EOF

The offsite monitoring teams are provided with radios capable of communicating with the site.

The industrial radio system is operated routinely by shift operations and security personnel and the base stations are tested by substations and shops. The communications links between the Control Room, the risk counties, and the State Police are tested weekly. Portable transceivers maintained in the Control Room are used daily as part of the normal plant operations.

7.6.5 Beaver Valley Emergency Response System

The Beaver Valley Emergency Response System (BVERS) is a computer aided Voice Mail System with teleconferencing capabilities.

The system provides two basic functions. First, the system will activate the BVPS Emergency Response Organization. Second, the system features a Gold Executive Conference capability for upper level management discussions. BVERS will be tested monthly.

7.6.6 Station Page Party Telephone System

A Station page party telephone system is used for onsite communications and notifications. There are five party lines available at each transceiver location. Power supply redundance is provided by connection into the vital AC distribution, and by backup batteries.

The page party system is the primary means for alerting and providing instructions to Station personnel.

7.6.7 Personal Radio Pagers (Beepers)

Key personnel in the emergency organizations are provided with personal radio pagers. These pagers can be group-activated by calling the pager services. BVERS and Voice Mail Systems provide personnel calling in with a message directing them to report to their emergency location, and will record information provided by the caller.

7.6.8 Station Emergency Alarm System

A plant emergency alarm system provides audible warning of emergency conditions to station personnel. The emergency alarms are sounded over the station page system. The system is powered from the vital AC distribution.

7.7 ONSITE FIRST AID AND MEDICAL FACILITIES

A Medical Facility, equipped with normal industrial first aid supplies, is located in the ERF Building. The BVPS Emergency Squad provides immediate first aid for any emergency within the protected area.

Standard first aid equipment is stored at designated locations throughout the station. The first aid kits are checked periodically, in accordance with station procedures and replenished as necessary.

7.8 DAMAGE CONTROL EQUIPMENT

Damage control equipment consists of normal and special purpose tools and devices used for maintenance functions throughout the station. Personnel assigned to damage control teams are cognizant of the locations of specific equipment, which may be required in an emergency. The Emergency Squad Chief and the BVPS Emergency Director have access to keys for maintenance tool cribs, shops and other locations where appropriate damage control equipment may be stored.

Implementing Procedures provide guidance for emergency teams, and include locations for designated emergency equipment.

INTENTIONALLY BLANK

APPENDIX D

Emergency Equipment Listings

APPENDIX D

EMERGENCY EQUIPMENT LISTINGS

The listings contained herein are represented of the equipment typically in place. Inventory lists used to ensure availability of appropriate equipment are controlled by Emergency Preparedness Administrative Procedures.[C3]

Enclosures

1. Typical Decontamination Equipment
2. Typical Ambulance Contamination Control Material
3. Typical Hospital Contamination Control Material
4. Typical Emergency Control Room Equipment
5. Typical Emergency Squad Equipment
6. Typical Monitoring Team Equipment
7. BVPS Unit 1 Radiation Monitoring System (RMS)
8. BVPS Unit 2 Digital Radiation Monitoring System (DRMS)
9. Typical Technical Support Center Equipment
10. Typical Operations Support Center Equipment

APPENDIX D - Enclosure 1

Typical Decontamination Equipment
(Available at BVPS)

Decontamination procedures

Protective clothing

Decontamination agents and equipment

Poly bags

Contamination monitoring instruments are drawn from normal storage locations and carried by the Radiation Technician. Detailed inventory lists are provided to be utilized in the required inventories.

APPENDIX D - Enclosure 2

Typical Ambulance Contamination Control Material
(Available at BVPS)

Contamination control supplies for minimizing contamination of ambulances used to transfer contaminated/injured personnel are provided at the Station. Exposure control items are provided for personnel involved with the transfer. These supplies typically include:

Blotting paper

Poly bags

Protective clothing

Lead blankets

Adhesive tape

Contamination monitoring instruments and anti-c's are maintained in Radiation Technician Response Kits. Dosimetry is drawn from normal storage locations and carried by the Radiation Technician escorting the transfer. Detailed lists are provided to be utilized in the required inventories.

APPENDIX D - Enclosure 3

Typical Hospital Contamination Control Material

Beaver Valley Power Station, in conjunction with the hospital, maintains an inventory of contamination control material at the local hospitals to which contaminated/injured personnel may be transferred from the station. Typically, this equipment includes:

Blotting paper

Water proof, non-skid sheeting

Yellow Poly bags

Step-off-pads

Sample bottles/vials/eye droppers

Adhesive tape

Protective clothing

Rubber gloves

Radioactive material labels/tags/tape

GM Tube frisking instrument

Additional contamination monitoring instruments are available in Response Kits carried by the Radiation Technician who escorts the contaminated/injured person to the hospital. Inventory lists for this equipment are provided to be utilized in the required inventories.

APPENDIX D - Enclosure 4

Typical Control Room Equipment

Controlled copy of the BVPS Emergency Preparedness Plan and Emergency Implementing Procedures.

System Prints

BVPS EPZ Map (wall mounted)

BVPS EPZ Maps

Dose projection material maintained in OSC

Radio and telephone equipment

Stationary supplies (pencils, paper, tape, etc.)

Inventory lists are provided to be utilized in the required inventories.

APPENDIX D - Enclosure 5

Typical Emergency Squad Equipment

First Aid Kits

SCBA Equipment

Protective clothing

Respirators

Flashlights and batteries

Rope

Appropriate dosimetry

Splints

Emergency blankets

Firefighting equipment

Inventory lists are provided to be utilized in the required inventories and Fire Plan.

APPENDIX D - Enclosure 6

Typical Monitoring Team Equipment

Appropriate Emergency Implementing Procedures

Sample Containers

Rope

Flashlights and batteries

Raincoats

Rubber gloves

Pencils, pens, paper

Adhesive labels

Saran Wrap

GM survey instruments

Ion chamber instrument

Appropriate dosimetry

Timepieces

Air samplers (AC or battery operated)

Air sampler media (charcoal, silver, zeolite, filter paper)

Survey/monitoring maps

Clipboards

Potassium Iodide

Poly bags

APPENDIX D - Enclosure 6 (Continued)

Typical Monitoring Team Equipment

Adhesive tape

Protective clothing

Respirators

The following equipment is provided for radiological support of normal operations, but would be available to supplement the equipment specifically designated for emergency use.

Portable contamination monitors (friskers)

Beta-gamma survey instruments

Portable area radiation monitors

High range beta-gamma survey instruments

Portable neutron count rate meters

Alpha count rate meters

Thermoluminescent dosimeter (TLD) reader

Whole body counter

Alpha/beta laboratory counter

Liquid scintillation beta counter

Gamma spectrometer

Portable air particulate monitors

Continuous air particulate monitors (CAMs)

Portable air samplers (battery and AC operated)

APPENDIX D - Enclosure 7
BVPS UNIT NO. 1 RADIATION MONITORING SYSTEM (RMS)

MONITORING		FUNCTION		MONITOR LOCATION
1.	VS-101A,B	AUX. BLDG. VENTILATION AND CONTAINMENT PURGE	(GAS & PARTICULATE)	752" AUX. BLDG.
	VS-109	AUX. BLDG. VENTILATION AND CONTAINMENT PURGE	(GAS, PART. & IODINE)*	752' AUX. BLDG.
	VS-111	AUX. BLDG. VENTILATION AND CONTAINMENT PURGE	(GAS)*	768' AUX. BLDG.
2.	VS-102A,B	AUXILIARY BUILDING VENTILATION	(GAS)	752' AUX. BLDG.
3.	VS-103A,B	FUEL BUILDING VENTILATION	(GAS)	768' FUEL BLDG.
4.	VS-104A,B	CONTAINMENT PURGE EXHAUST (Not in service during operation)		CNMT. PURGE DUCT
5.	VS-105	LEAK COLLECTION AREAS	(GAS)	752' AUX. BLDG.
6.	VS-106	WASTE GAS DECAY TANK VAULT	(GAS)	752' AUX. BLDG.
7.	VS-107A,B	SUPPLEMENTARY LEAK COLLECTION SYSTEM	(GAS & PARTICULATE)	752' AUX. BLDG.
	VS-110	SUPPLEMENTARY LEAK COLLECTION SYSTEM	(GAS, PART. & IODINE)*	752' AUX. BLDG.
	VS-112	SUPPLEMENTARY LEAK COLLECTION SYSTEM	(GAS)+	768' AUX. BLDG.
8.	GW-108A,B	PROCESS VENT EFFLUENT	(GAS & PARTICULATE)	752' AUX. BLDG.
	GW-109	PROCESS VENT EFFLUENT	(GAS & PART. & IODINE)*	752' AUX. BLDG.
	GW-110	PROCESS VENT EFFLUENT	(GAS & PARTICULATE)+	768' AUX. BLDG.
9.	RM-215A,B	CONTAINMENT ATMOSPHERE	(GAS & PARTICULATE)	752' AUX. BLDG.
10.	RM-217A,B	MULTI-SAMPLE MONITOR PAB AREAS	(GAS & PARTICULATE)	752' AUX. BLDG.
11.	MS-100A	"A" STEAM GENERATOR STEAM RELIEF EFFLUENT	(STEAM)	M.S. VALVE RM. ROOF
12.	MS-100B	"B" STEAM GENERATOR STEAM RELIEF EFFLUENT	(STEAM)	M.S. VALVE RM. ROOF
13.	MS-100C	"C" STEAM GENERATOR STEAM RELIEF EFFLUENT	(STEAM)	M.S. VALVE RM. ROOF
14.	MS-101	AUX. FEEDWATER PUMP TURBINE EXHAUST	(STEAM)	M.S. VALVE RM. ROOF
15.	AS-100	AUX. STEAM CONDENSATE	(LIQUID)	735' AUX. BLDG.
16.	BD-101	STEAM GENERATOR BLOWDOWN	(LIQUID)	693' TURB. BLDG.
17.	SS-100	STEAM GENERATOR BLOWDOWN	(LIQUID)	735' AUX. BLDG.
18.	CCR-100	COMPONENT COOLING WATER	(LIQUID)	722' AUX. BLDG.
19.	RW-100	RIVER WATER FOR COMPONENT COOLING AND RECIRC. SPRAY HEAT EXCHANGERS	(LIQUID)	697' TURB. BLDG.
20.	RW-100A,B,C,D	RECIRC. SPARY HEAT EXCHANGERS RIVER WATER	(LIQUID)	722' SAFEGUARDS
21.	RW-101	COMPONENT COOLING HEAT EXCHANGER RIVER WATER	(LIQUID)	735' AUX. BLDG.
22.	CH-101A,B	REACTOR COOLANT LETDOWN	(LIQUID)	722' AUX. BLDG.
23.	LW-104	LIQUID WASTE EFFLUENT	(LIQUID)	722' AUX. BLDG.
24.	LW-116	LIQUID WASTE EFFLUENT	(LIQUID)	722' AUX. BLDG.
25.	DA-100	AUXILIARY FEEDWATER AREA	(LIQUID)	722' SAFEGUARDS
26.	SV-100	CONDENSER AIR EJECTOR	(GAS)	713' TURB. BLDG.
27.	RM-201	AREA RADIATION		OUTSIDE AIRLOCK
28.	RM-202	AREA RADIATION		767' CONTAINMENT
29.	RM-203	AREA RADIATION - CONTAINMENT FUEL MANIPULATOR CRANE (NOT IN SERVICE DURING OPERATION)		767' CONTAINMENT

* Special Particulate, iodine, Noble Gas - SPING
\+ SA9/SA10 Units

APPENDIX D - Enclosure 7
BVPS UNIT NO. 1 RADIATION MONITORING SYSTEM (RMS)

MONITORING		FUNCTION	MONITOR LOCATION
30.	RM-204	AREA RADIATION - INCORE INSTRUMENT ROOM	738' CONTAINMENT
31.	RM-205	AREA RADIATION	735' DECON BLDG.
32.	RM-206	AREA RADIATION - NEW FUEL STORAGE	752' FUEL BLDG.
33.	RM-207	AREA RADIAITON - FUEL POOL BRIDGE	767' FUEL BLDG.
34.	RM-208	AREA RADIATION	735' SOLID WASTE
35.	RM-209	AREA RADIATION	722' AUX. BLDG.
36.	RM-210	AREA RADIATION	752' AUX. BLDG.
37.	RM-211	AREA RADIATION	722' AUX. BLDG.
38.	RM-212	AREA RADIAITON - CHEMISTRY SAMPLE AREA	735' AUX. BLDG.
39.	RM-214	AREA RADIATION	RADIOCHEM. LAB
40.	RM-218A,B	AREA RADIATION	CONTROL ROOM
41.	RM-219A,B	AREA RADIATION - CONTAINMENT HIGH RANGE	767' CONTAINMENT

* Special Particulate, iodine, Noble Gas - SPING
\+ SA9/SA10 Units

APPENDIX D - Enclosure 8
BVPS UNIT NO. 2 DIGITAL RADIATION MONITORING SYSTEM (DRMS)

	MONITORING	FUNCTION		MONITOR LOCATION
1.	2ARC-RQI100	AIR EJECTOR DISCHARGE	(GAS)	752-6 TURB. BLDG.
2.	2CCP-RQI100	COMPONENT COOLING WATER	(LIQUID)	718-6 AUX. BLDG.
3.	2CHS-RQI100	REACTOR COOLANT LETDOWN HIGH/LOW	(LIQUID)	718-6 AUX. BLDG.
4.	2CNA-RQI100	AUXILIARY STEAM CONDENSATE	(LIQUID)	718-6 AUX. BLDG.
5.	2CNA-RQI101	EVAPORATION REBOILER CONDENSATE	(LIQUID)	722-6 WASTE HNDLG.
6.	2GWS-RQI102	GASEOUS WASTE SURGE TK TRANSFER LINE	(GAS)	735-6 AUX. BLDG.
7.	2GWS-RQI102	AIR EJECTOR DELAY BED EXHAUST	(GAS)	755-6 AUX. BLDG.
8.	2GWS-RQI103	AERATED VENT TRANSFER LINE	(GAS)	735-6 AUX. BLDG.
9.	2GWS-RQI104	WASTE GAS STORAGE TANK	(GAS)	735-6 DECON BLDG.
10.	2HVL-RQI112	CONDENSATE POLISHING VENT STACK	(GAS & PARTICULATE)	794-6 COND. POL.
11.	2HVR*RQ104A	CONTAINMENT PURGE	(GAS)	782-CNMT.
12.	2HVR*RQ104B	CONTAINMENT PURGE	(GAS)	782 CNMT.
13.	2HVS-RQI101	VENTILATION VENT	(GAS & PARTICULATE)	773-6 AUX. BLDG.
14.	2HVS*RQ 109A	ELEVATED RELEASE (PARTICULATE)	(PARTICULATE)	773-6 AUX. BLDG.
15.	2HVS*RQ 109B	ELEVATED RELEASE (LOW RANGE)	(GAS)	773-6 AUX. BLDG.
16.	2HVS*RQ 109C	ELEVATED RELEASE (MID RANGE)	(GAS)	773-6 AUX. BLDG.
17.	2HVS*RQ 109D	ELEVATED RELEASE (HIGH RANGE)	(GAS	773-6 AUX. BLDG.
18.	2MSS*RQI101A	MAIN STEAM LINE	(STEAM)	745-6 SERVICE BLDG.
19.	2MSS*RQI101B	MAIN STEAM LINE	(STEAM)	745-6 SERVICE BLDG.
20.	2MSS*RQI101C	MAIN STEAM LINE	(STEAM)	745-6 SERVICE BLDG.
21.	2RMC*RQ201	CONTROL ROOM AREA		CONTROL BLDG.
22.	2RMC*RQ202	CONTROL ROOM AREA		CONTROL BLDG.
23.	2RMC-RQI301	CONTROL ROOM AIRBORNE	(GAS & PARTICULATE)	CONTROL BLDG.
24.	2RMF-RQ201	NEW FUEL STORAGE AREA		755-4 FUEL BLDG.
25.	2RMF-RQ202	FUEL PIT BRIDGE		FUEL BLDG.
26.	2RMF-RQI301	FUEL BUILDING VENTILATION	(GAS & PARTICULATE	766-4 FUEL BLDG.
27.	2RMJ-RQ201	WASTE HANDLING - 722 AREA		722-6 WASTE HANDLING
28.	2RMJ-RQ202	WASTE HANDLING - 755 AREA		WASTE HANDLING
29.	2RMJ-RL202	WASTE HANDLING - 755 AREA		WASTE HANDLING
30.	2RMJ-RQ203	WASTE HANDLING - 735 AREA		WASTE BLDG.
31.	2RMJ-RL203	WASTE HANDLING - 735 AREA		WASTE HANDLING
32.	2RMJ-RQ204	WASTE HANDLING - 735 AREA		WASTE HANDLING
33.	2RMJ-RQI301	WASTE HANDLING BUILDING	(GAS & PARTICULATE)	733-6 AUX. BLDG.
34.	2RML-RQ201	CONDENSATE POLISHING - 722 AREA		722-6 COND. POL.
35.	2RML-RQ202	CONDENSATE POLISHING - 735 AREA		735-5 COND. POL.
36.	2RML-RQ203	CONDENSATE POLISHING - 752 AREA		752-6 COND. POL.
37.	2RML-RQ204	CONDENSATE POLISHING - 744 AREA		744-6 COND. POL.
38.	2RML-RQ205	CONDENSATE POLISHING - 735 AREA		735-6 COND. POL.
39.	2RML-RQ206	CONDENSATE POLISHING - 735 AREA		735-6 COND. POL.
40.	2RML-RQI301	CONDENSATE POLISHING BLDG. AIRBORNE	(GAS & PARTICULATE)	794-6 COND. POL.
41.	2RMP-RQ201	AUXILIARY BUILDING - 710 AREA		718-6 AUX. BLDG.
42.	2RMP-RQ202	AUXILIARY BUILDING - 710 AREA		718-6 AUX. BLDG.

APPENDIX D - Enclosure 8
BVPS UNIT NO. 2 DIGITAL RADIATION MONITORING SYSTEM (DRMS) (Cont.)

	MONITORING	FUNCTION		MONITOR LOCATION
43.	2RMP-RQ203	AUXILIARY BUILDING - 710 AREA		718-6 AUX. BLDG.
44.	2RMP-RQ204	AUXILIARY BUILDING - 735 AREA		735-6 AUX. BLDG.
45.	2RMP-RQ205	AUXILIARY BUILDING - 735 AREA		735-6 AUX. BLDG.
46.	2RMP-RQ206	AUXILIARY BUILDING - 735 AREA		755-6 AUX. BLDG.
47.	2RMP-RQ207	AUXILIARY BUILDING - 755 AREA		755-6 AUX. BLDG.
48.	2RMP-RQ208	AUXILIARY BUILDING - 755 AREA		755-6 AUX. BLDG.
49.	2RMP-RQ209	AUXILIARY BUILDING - 773 AREA		733-6 AUX. BLDG.
50.	2RMP-RQ210	AUX. BLDG. SAMPLE ROOM AREA		718-6 AUX. BLDG.
51.	2RMP-RL210	AUX. BLDG. SAMPLE ROOM AREA		718-6 AUX. BLDG.
52.	2RMP-RQI300	AUXILIARY BUILDING 718A	(GAS & PARTICULATE)	735-6 AUX. BLDG.
53.	2RMP-RQI302	AUXILIARY BUILDING 718B	(GAS & PARTICUALTE)	735-6 AUX. BLDG.
54.	2RMP-RQI304	AUXILIARY BUILDING 718C	(GAS & PARTICULATE)	735-6 AUX. BLDG.
55.	2RMP-RQI306	AUXILIARY BUILDING 735A	(GAS & PARTICULATE)	735-6 AUX. BLDG.
56.	2RMP-RQI308	AUXILIARY BUILDING 735B	(GAS & PARTICULATE)	735-6 AUX. BLDG.
57.	2RMP-RQI310	AUXILIARY BUILDING 755A	(GAS & PARTICULATE)	755-6 AUX. BLDG.
58.	2RMP-RQI312	AUXILIARY BUILDING 755B	(GAS & PARTICULATE)	755-6 AUX. BLDG.
59.	2RMQ-RQ201	DECONTAMINATION AREA		749-6 DECON. BLDG.
60.	2RMQ-RQI301	DECONTAMINATION BUILDING	(GAS & PARTICULATE)	766-4 FUEL BLDG.
61.	2RMQ-RQI303	WASTE GAS STORAGE VAULT	(GAS & PARTICULATE)	735-6 DECON. BLDG.
62.	2RMR-RQ201	REACTOR CONTAINMENT LOW RANGE		767' CONTAINMENT
63.	2RMR-RL201	REACTOR CONTAINMENT LOW RANGE		767' CONTAINMENT
64.	2RMR-RQ202A	OUTSIDE PERSONNEL HATCH AREA		767' CABLE VAULT & ROD CONT.
65.	2RMR-RQ202B	OUTSIDE PERSONNEL HATCH AREA		767' CABLE VAULT & ROD CONT.
66.	2RMR-RL202	OUTSIDE PERSONNEL HATCH AREA		767' CABLE VAULT & ROD CONT.
67.	2RMR-RQ203	MANIPULATOR CRANE	CONTAINMENT	CONTAINMENT
68.	2RMR-RL203	MANIPULATOR CRANE		CONTAINMENT
69.	2RMC-RQ202A	U2 CONTROL ROOM		CONTROL ROOM
70.	2RMC-RQ202B	U2 CONTROL ROOM		CONTROL ROOM
71.	2RMR-RQ204	INCORE INSTRUMENTATION AREA		743-4 CONTAINMENT
72.	2RMR-RL204	INCORE INSTRUMENTATION AREA		743-4 CONTAINMENT
73.	2RMR-RQ205A	SAFEGUARDS RECOMBINER AREA		742-0 SAFEGUARDS
74.	2RMR-RQ205B	SAFEGUARDS RECOMBINER AREA		742-0 SAFEGUARDS
75.	2RMR*RQ206	INCONTAINMENT HIGH RANGE		CONTAINMENT
76.	2RMR*RL206	INCONTAINMENT HIGH RANGE		CONTAINMENT
77.	2RMR*RL207	INCONTAINMENT HIGH RANGE		CONTAINMENT
78.	2RMR*RL207	INCONTAINMENT HIGH RANGE		CONTAINMENT

APPENDIX D - Enclosure 8
BVPS UNIT NO. 2 DIGITAL RADIATION MONITORING SYSTEM (DRMS) (Cont.)

	MONITORING	FUNCTION		MONITOR LOCATION
79.	2RMR-RQI301	LEAK COLLECTION VENTILATION	(GAS & PARTICULATE)	773-6 AUX. BLDG.
80.	2RMR-RQI303	CONTAINMENT AIRBORNE	(GAS & PARTICUALTE)	738-10 CABLE VAULT & ROD CONT.
81.	2RMS-RQ221	SPARE		
82.	2RMS-RQ222	SPARE		
83.	2RMS-RQ223	PRIMARY ACCESS FACILITY AREA		
84.	2RMS-RQ224	SPARE		
85.	2SGC-RQI100	LIQUID WASTE PROCESS EFFLUENT	(LIQUID)	718-6 AUX. BLDG.
86.	2SSR-RQI100	STEAM GENERATOR BLOWDOWN	(LIQUID)	718-6 AUX. BLDG.
87.	2SWS*RQI100A	RECIRC. SPRAY Hx SW	(LIQUID)	759-0 DIESEL GEN.
88.	2SWS*RQI100B	RECIRC. SPRAY Hx SW	(LIQUID)	759-0 DIESEL GEN.
89.	2SWS*RQI100C	RECIRC. SPRAY Hx SW	(LIQUID)	759-0 DIESEL GEN.
90.	2SWS*RQI100D	RECIRC. SPRAY Hx SW	(LIQUID)	759-0 DIESEL GEN.
91.	2SWS*RQI101	COMPONENT COOLING SW	(LIQUID)	710-6 AUX. BLDG.
92.	2SWS-RQI102	COMPONENT COOLING Hx SW	(LIQUID)	710-6 AUX. BLDG.

INTENTIONALLY BLANK

APPENDIX D - Enclosure 9

Typical Technical Support Center Equipment

Controlled copy of BVPS Emergency Preparedness Plan and Emergency Implementing Procedures.

BVPS EPZ Map (wall mounted)

Systems Status Boards

Keys to Files (manuals, procedures, engineering drawings)

Stationary Supplies

Blank data forms and logs

APPENDIX D - Enclosure 10)

Typical Operations Support Center Equipment

Appropriate dosimetry

Respirators (and Iodine sorbent canisters)

Anti-contamination clothing

Air Sampler and filter media

Potassium Iodide tablets

Contamination and access control material (poly bags, tape, signs, barriers)

Stationary supplies (pens, paper)

Survey instruments