DAVIS-BESSE NUCLEAR POWER STATION

#### THE TOLEDO EDISON COMPANY

EMERGENCY PLAN IMPLEMENTING PROCEDURES

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DATE :	MAY	1, 1983				
ISSUED	BY:	STATION	SUPERIN	TENDENT,	EMERGENCY	PLANNING

#### DAVIS-BESSE

#### NUCLEAR POWER STATION

### EMERGENCY PLAN IMPLEMENTING PROCEDURES

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#### THE TOLEDO EDISON COMPANY DAVIS-BESSE NUCLEAR POWER STATION EMERGENCY PLAN IMPLEMENTING PROCEDURES REVISION INDEX

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Revision 28 April, 1983

#### EMERGENCY PLAN IMPLEMENTING PROCEDURES

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Revision 2 December, 1982

Davis-Besse Nuclear Power Station

#### Unit No. 1

Emergency Plan Implementing Procedure EI 1300.00

Station Response to Emergencies

## Record of Approval and Changes

Prepared by	G. J. Reed	5/30/80
	Contraction of the second	Date
Submitted by	C. E. Wells	6/13/80
	Section Head	Date
Recommended by	Blising	6/13/80
	SRB Chairman	Date
QA Approved	NA	
	Quality Assurance Manager	Date
Approved by	Domman	8/18/80
	Station Superintendent	Date

Revision SRB QA Sta. Supt. No. Recommendation Date Approved Date Approved Date and 1/21/37 NA TOmu 1 2 TOM TOMA 31 4.03 18183 .TDa 2

#### 1. PURPOSE

To present a summary of the DBNPS Emergency Plan.

2. SCOPE

To present a summary of Station actions during an emergency and to outline the interface between Station procedures and Emergency Implementing Procedures (EI 1300 series).

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- 3. REFERENCES
  - 3.1 Davis-Besse Nuclear Power Station Emergency Plan
  - 3.2 Davis-Besse Nuclear Power Station Emergency Plan Telephone Directory
  - 3.3 TECo Corporate Radiological Emergency Response Procedure
  - 3.4 Emergency Implementing Procedures EI 1300 series
  - 3.5 Administrative Procedures AD 1827 series
  - 3.6 EP 1202.35 Fire Emergency
  - 3.7 HP 1604.01 Personnel Decontamination
  - 3.8 Admin Memos 38, 39, 40

#### 4. DEFINITIONS

- 4.1 <u>Dose Projection</u> The calculated estimate of a radiation dose to individuals at a given location (usually offsite), determined from the quantity of radioactive material released and the appropriate meteorological transport and dispersion parameters.
- 4.2 <u>Emergency Action Levels</u> Radiological dose rates, specific concentrations of radioactive materials; or specific instrument readings and indications (including their rate of change) that may be used as thresholds for initiating such specific emergency measures as designating a particular classification of emergency, initiating a notification procedure, or initiating a particular protective action.
- 4.3 <u>Emergency Control Center</u> (ECC) A specifically designated location which is equipped to facilitate the control and coordination of emergency activities and assessments.

4.4 <u>Emergency Duty Officer</u> (EDO) - An assigned individual responsible for direction and coordination of activities during an emergency situation at the Station.

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- 4.5 <u>Emergency Operations Center</u> (EOC) An offsite location utilized by State, County, and other government agencies and organizations to perform assessments of radiological conditions and to coordinate offsite activities (access, evacuation, etc.).
- 4.6 <u>Emergency Planning Zones</u> (EPZ) Two zones that EPA recommends be established around all nuclear power stations. One zone with a radius of 10 miles (16090 meters) for plume exposure pathway, and the other with a radius of 50 miles (80450 meters) for food ingestion pathway.

In these zones, predetermined protective action plans are needed.

4.7 <u>Operations Support Center</u> (OSC) - An area in the Station in close proximity to the Control Room to which Station support personnel report and await instructions from the Shift Supervisor, Emergency Duty Officer or Station Operations Manager.

- 4.8 <u>Projected Exposure Time</u> (PET) The estimated period of time that the population in the area surrounding DBNPS may be exposed to radiation as a result of an accidental airborne radioactive release. PET starts when the airborne radioactivity release is estimated to cross the Owner-Controlled Area, and ends when the radiation levels offsite are expected to return to normal.
- 4.9 <u>Protective Action Guides</u> (PAG's) Projected radiological dose or dose commitment values to individuals in the general population that warrant protective action following a release of radioactive material. Protective actions would be warranted provided the reduction in individual dose is NOT offset by excessive risks to individual safety in taking the protective action. The PAG does NOT include the dose that has unavoidably occurred prior to the assessment.
- 4.10 <u>Technical Support Center</u> (TSC) An area within the owner controlled area, which has the capabilities to display and transmit station status information to individuals who are knowledgeable of and responsible for engineering and management support of reactor operations in the event of an emergency situation.

#### 5. EMERGENCY PLAN SUMMARY

5.1 The DBNPS Emergency Plan establishes the concepts, evaluation and assessment criteria, and protective actions that are necessary in order to limit and mitigate the consequences of potential or actual radiological emergencies. The plan provides the necessary prearrangements, directions, and organization so that all Station emergencies can be effectively and efficiently resolved in order to safeguard Station personnel, property and the general public.

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#### STATION RESPONSE

- 6.1 The Station Superintendent is ultimately responsible for the assignment of responsibilities in the onsite Emergency Organization. However, the onsite Emergency Organization is predefined, and alternate assignments specified.
- 6.2 When an emergency condition is declared, the members of the normal plant organization assume duties in the onsite Emergency Organization.
  - 6.2.1 The Shift Supervisor's primary responsibility is maintaining the plant in a safe condition as well as carrying out the initial steps of the EDO:
    - a. Verify the existence of an emergency condition.
    - b. Notify Station personnel, the Station Superintendent, EDO, and offsite support groups as required.
    - c. Activate emergency teams.
    - d. Control access of personnel to Control Room.
    - e. Initiate immediate protective measures as required.
    - f. Verify operating status of the Plant and Station.
  - 6.2.2 The Shift Supervisor assumes the role as EDO until properly relieved by the on-call EDO or his alternate.
  - 6.2.3 The Control Room, during an emergency, will control the power plant to mitigate the effects of the emergency conditions.

6.2.4 The Assistant Station Superintendent, Operations, or his alternate, the Operations Engineer, becomes the Plant Operations Manager. He is responsible for keeping the Station Operations Manager advised of plant operations. He may assist the Shift Supervisor in directing plant activities and damage control efforts, however, <u>ultimate authority for directing all phases of</u> plant operations lies with the Shift Supervisor.

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- 6.2.5 The Radcon Opeations Manager is the Chemist and Health Physicist or the Chemical and Radiation Protection Engineer. He directs and coordinates the radioactive waste and radiological controls aspects of the recovery operation.
- 6.2.6 The Operations Engineer, or the Operations Supervisor, becomes the Plant Operations Engineer. He supervises Control Room activities, and performs on-the-spot operation analysis as required by the Shift Supervisor. The Shift Supervisor, and through him the operating shift, reports to the Operations Engineer.
- 6.2.7 Plant Maintenance, during an emergency, is directed by the Maintenance Engineer, or his alternate, the Lead Maintenance Support Engineer, or Lead Instrumentation and Control Engineer.
- 6.3

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The EDO's responsibilities include:

- a. Implements appropriate protective actions to mitigate the effects of the incident. The Implementing Procedures for the plan shall provide necessary guidance. The judgment of the EDO plays a vital role in any emergency and in some cases, may take precedence over previously preplanned actions.
- b. The safety and well-being of Station personnel.
- c. Determination as to necessity to evacuate the Station and/or the local area.
- d. Provides projected dose information.
- e. Recommends to offsite emergency organizations for implementing effective protective measures for the general public.

- 6.4 Onsite Assessment Teams (OAT)
  - 6.4.1 The Onsite Assessment Team is headed by the Nuclear Engineering Manager or his alternate, the Plant Nuclear Systems Engineer.

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- 6.4.2 The Team Manager supervises the analysis efforts of Company engineers, NSSS vendors, and other plant staff.
- 6.4.3 The location of the OAT is the TSC.
- 6.4.4 The Technical Engineer or his alternate, the Nuclear and Performance Engineer, will be in the TSC to analyze vital plant parameters and plant response.
- Other emergency response personnel provide specialized support:
  - 6.3.1 Radiation Monitoring teams (Admin Memo 42)
  - 6.5.2 First Aid Team (Admin Memo 38)
  - 6.5.3 Fire Brigade (Admin Memo 39)
  - 6.5.4 Emergency Facility Personnel
    - a. ECC (EI 1300.08)
    - b. TSC (EI 1300.07)
    - c. OSC (EI 1300.06)
- 6.6 When required, additional support is provided by the TED Corporate Emergency Organization in the form of technical, administrative, and logistical support to the onsite Emergency Organization.

7. EMERGENCY PLAN STEPS

6.5

In general, the Emergency Plan encompasses the following basic steps.

- a. Detection of the emergency
- b. Classification of the emergency
- c. Activation of the responding organization(s)

- d. Assessment of the situation
- e. Initiation of protective actions
- f. Initiation of corrective actions
- g. Aid to affected persons
- h. Periodic dissemination of updated information

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- i. Reentry and recovery
- 7.1 Detection of the Emergency

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This step of the Emergency Plan relies on the Operating Shift Crew to determine whether an abnormal situation exists based on all plant parameters, visual sitings of problems or sound engineering judgement. This step may also include actions required by Emergency Procedures, Alarm Procedures, or Abnormal Procedures, etc.

#### 7.2 Classification of the Emergency

- 7.2.1 Emergencies are grouped into four (4) classifications listed below in order of increasing severity:
  - a. Unusual-Event

The occurrence of an event or events which indicate a <u>potential</u> degradation of the level of safety of the plant. Unusual Event emergencies involve minor situations that have the potential to escalate to more serious emergencies.

#### b. Alert

The occurrence of an event or events which involve an actual or potential <u>substantial</u> degradation of the level of safety of the plant. The consideration is, as in an Unusual Event, to prepare to cope with potentially more serious emergencies. Alert emergencies may involve limited release of radioactive material.

c. Site Emergency

The occurrence of an event or events which involve actual or likely major failures of plant functions needed for protection of the public. The potential for a situation hazardous to the general public is the major concern of the Site Emergency classification. There also exists a <u>significant</u> actual or potential release of radioactive material.

d. General Emergency

The occurrence of an event or events which involve actual or imminent core degradation with the potential for loss of containment integrity. Large amounts of radioactive material, immediately hazardous to the general public, could be released during a General Emergency.

- 7.2.2 The classification of the emergency is determined by comparing plant conditions with the Emergency Action Levels described in Emergency Plan Activation Procedure EI 1300.01.
- 7.2.3 The Shift Supervisor is responsible for determining the initial classification of the emergency.
- 7.3 Activation of the Responsible Organization(s)
  - 7.3.1 Upon determination of the appropriate emergency class, the Shift Supervisor shall then refer to the appropriate emergency classification procedures:

a.	Unusual Event	EI	1300.02
b.	Alert	EI	1300.03
c.	Site Emergency	EI	1300.04
d.	General Emergency	EI	1300.05

7.3.2 The Shift Supervisor assumes the duties as interim Emergency Duty Officer and proceeds with the actions outlined in the EDO check lists provided with the above procedures. He remains the interim EDO until relieved by the assigned EDO or until the emergency is terminated. 7.3.3 Part of each checklist is ensuring that proper, timely notifications are made in the event of an emergency.

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For example:

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- a. Notification should be made to State/Local authorities (via Ottawa County Sheriff) as soon as possible (normally within 15 minutes) following the declaration of an emergency classification, as identified in 10 CFR 50 Appendix E, Section IV.D.3., Domestic Licensing of Production and Utilization Facilities.
- b. Notification should be made to the NRC as soon as possible and in all cases within one hour of the occurrence of any significant event as identified in 10 CFR 50.72, Licensing of Production and Utilization Facilities.
- 7.3.4 The EDO has some options as to which organizations and/or individuals should be activated. These decisions should be based on obtaining the best sources of information, experience and advice available.
- 7.3.5 The expected degree of involvement of participating organizations is shown in Table 1.
- 7.3.6 The Emergency Organization response to emergencies is shown in Table 2.
- 7.3.7 The Emergency Organization is shown in Figures 1 and 2.
- 7 3.8 The DBNPS Emergency Call System is shown in Figure 3.

7.4 Assessment of the Situation

Effective coordination and direction of all elements of the emergency organization requires continuing accident assessment throughout an emergency situation. Each emergency class shall invoke similar assessment methods, however each classification imposes a different magnitude of assessment effort. In the following subsections, assessment actions to be taken for each emergency classification are outlined.

#### 7.4.1 Assessment Actions for Unusual Events

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The continuing assessment actions to be performed for this classification consist of the normal monitoring of Control Room and other plant instrumentation and status indication until the situation is resolved. If a fire is the reason for the declaration of an Unusual Event, the Fire Brigade Captain, upon reporting to the fire location will make continuing assessments based on his knowledge and experience and report his findings to the Shift Supervisor on whether offsite fire fighting support is required. In the case of personnel injury and/or illness, the utilization of offsite medical assistance may be cause to declare an

Unusual Event if the injury involves personnel contamination.

7.4.2 Assessment Actions for Alerts

The assessment actions for an Alert shall include:

- Increased surveillance of in-plant instrumentation.
- b. If possible, the dispatching of shift personnel to the identified problem area for confirmation and visual assessment of the problem.
- c. The dispatch of onsite Radiation Monitoring Team's (RMT's) to monitor for possible releases and to provide confirmation of correct accident classification.
- d. If a radiological accident is occurring, the in-plant instrumentation necessary to obtain meteorological and radiological data for calculating or estimating projected doses will be monitored. This dose assessment activity shall continue until termination of the emergency in order that the updating of initial assessments may be provided to all concerned offsite agencies and to the EDO.

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## Assessment Actions for Site Emergencies

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The assessment actions for the Site Emergency classification are similar to the actions for an Alert, however due to the increased magnitude of the possible release of radioactive material, a significantly larger assessment activity shall occur. The necessary personnel for this assessment effort shall be provided by mobilization of the onsite and offsite emergency organizations. Specifically:

- a. An increased amount of plant instrumentation shall be monitored. In particular, indica-tions of core status (e.g., incore thermocouple readings, etc.) shall be monitored.
- b. Monitoring efforts shall be greatly increased. Onsite and offsite monitoring teams shall be dispatched. In addition to beta-gamma field measurements, the change-out of thermoluminescent dosimeters (TLD's) at frequent intervals may be performed; air sampling and collection of other environmental media for assessment of material transport and deposition shall be performed.
- c. Dose assessment activities shall be conducted more frequently, with an increased emphasis on dose projection for use as a factor in determining the necessity for protective actions. Radiological and meteorological instrumentation readings shall be used to project the dose rate various distances from the Station, and to determine the integrated dose received. In reporting the dose projections to the EDO or to offsite agencies, the dose rate, dose, and the basis for the time used for the dose estimate shall always be provided. Any confirmation of dose rates by offsite RMT's shall be reflected in reporting and/or revising dose estimate information provided to offsite and internal organizations.
- Assessment Actions for General Emergencies 7.4.4

Assessment actions for the General Emergency

classification shall be the same as for the Site Emergency with a shift of etchasis to greater offsite monitoring efforts and dose projection efforts extending to distances further from the plant. Additionally, since the projected doses are likely to be much closer to the EPA PAG's, greater emphasis shall be placed on the assessment of release duration. Judgements and assumptions used for dose assessment shall always be reported.

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#### Initiation of Protective Actions

Protective actions are emergency measures taken during or after an emergency situation that are intended to minimize or eliminate the hazard to the health and safety of the general public and/or Station personnel. Protective actions include the following:

7.5.1 Protective Cover, Evacuation, Fersonal Accountability

> During an emergency, sheltering may be the most effective protective action. The relocation of personnel may also be required in order to prevent or minimize exposure to radiation and radioactive materials. In any event, personnel accountability is very important during this time. The following subsections present information on policies applicable to such situations.

#### a. Plant Site

All persons onsite at the time of an Alert, Site, or General Emergency, who do NOT have emergency assignments (nonessential personnel) shall be notified of the emergency classification by announcement over the public address system. These personnel may be required to report to assembly areas for accountability, monitoring and possible evacuation. At the assembly area, members of the emergency organization shall direct and conduct accountability, monitoring and evacuation efforts.

b. Offsite Areas

The responsibility for actions to protect persons in offsite areas rests with the State

of Ohio and Ottawa County officials. Responsibilities are described in detail in the State Flan and implemented in conjunction with the County Plan. The means to warn or advise persons involved in taking protective actions is the responsibility of the Ottawa County Disaster Services Agency (DSA) Coordinator and the Ottawa County emergency organization. Ottawa County is responsible, according to the State Plan, for the preparation and dissemination of information material on protective actions for the general public.

Use of Onsite Protective Equipment and Supplies 7.5.2

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The following onsite locations have been designated as areas where emergency teams can be assembled and equipped.

- a. Operations Support Center/Turbine Deck
- b. Health Physics Monitor Room
- c. Radiological Testing Laboratory
- d. Emergency Control Center

7.5.2.1

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- Emergency equipment and supplies shall be stored in close proximity to the assembly points.
- 7.5.2.2 A complete list of emergency equipment and supplies can be found in appropriate procedures if the Emergency Plan.
- 7.5.2.3 Emergency response team members have been trained in the use of specific emergency equipment.

7.5.2.4 Emergency equipment and supplies will be used in accordance with Emergency Flan Implementing Procedures or as directed by the Emergency Duty Officer, Shift Supervisor, or emergency team leaders.

#### 7.5.3 Contamination Control Measures

This section describes provisions for praventing or minimizing direct or subsequent ingestion exposure to radioactive materials deposited on the ground or other surfaces.

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a. Station Area

Access to the owner-controlled area is controlled. In addition, there are no areas for producing agricultural products within the owner-controlled area. Station contamination control shall be exercised in accordance with approved procedures.

#### b. Offsite Areas

It is the responsibility of the State Department of Agriculture, in conjunction with the Department of Health and Environmental Protection, to issue guidance and coordinate actions to control contaminated agricultural products offsite. The State of Ohio has the responsibility to act on TECo recommendations and to develop their own course of action.

#### 7.6 Initiation of Corrective Actions

- 7.6.1 Detailed operating procedures are available to the operators for use during emergencies as well as during normal operations. Specific Emergency Procedures are provided to assist the operators in placing the plant in a safe condition and taking the necessary supplemental corrective actions. In addition, operations personnel are capable of taking appropriate corrective actions based on their training, knowledge and experience.
- 7.6.2 Selected Davis-Besse Nuclear Power Station Staff personnel, including operation, health physics, chemistry and radiochemistry, and maintenance personnel are assigned to emergency teams.

These teams are capable of responding to situations in order to assess conditions and take any applicable corrective actions. Maintenance personnel shall provide the necessary crafts expertise to effect repair and damage control functions. 7.6.3 Corrective actions shall normally be planned events that are taken to mitigate the consequences of, or terminate the emergency situation. Planned radioactive releases or corrective actions that may result in a radioactive release shall be evaluated by the Emergency Duty Officer, and his staff, as far in advance of the event as is possible. Such events and data pertaining to the release shall be reported to the appropriate offsite emergency response organization and/or agencies prior to any controlled release during an emergency or post emergency situation.

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#### 7.7 Aid to Affected Persons

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#### 7.7.1 Emergency Personnel Exposure

Emergency measures may warrant the acceptance of above-normal radiation exposures. Saving a life, measures to circumvent substantial exposures to population groups, or even preservation of valuable installations, may all be sufficient cause for above normal exposures. The following are the guidelines for these emergency activities:

a. Life-saving action 100 rem

b. Corrective action 25 rem

Personnel involved in any of the above actions must be volunteers.

The senior Toledo Edison Management individual present shall authorize the above exposures and is responsible for maintaining exposures below these values. He shall seek advice from the Radcon Operations Manager (Chemist and Health Physicist) or members of the C&HP staff. He shall assure that measures are taken to minimize other exposures (such as internal exposure) during the conduct of emergency operations.

#### 7.7.2 Thyroid Blocking

A ready supply of suitable thyroid blocking agent will be maintained and available for use by Toledo Edison employees. Guidance for administration of the blocking agent will be provided by medical advisors and it will be distributed as per AD 1827.12.

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#### 7.7.3 Decontamination and First Aid

Personnel found to be contaminated shall undergo decontamination by Health Physics personnel (or other qualified personnel as specified in HP Procedures). It is preferred that personnel decontamination be performed by trained Health Physics personnel, however other TECo personnel are instructed in both decontamination and first aid procedures. Measures shall be taken to prevent the spread of contamination.

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Emergency first aid and medical treatment shall be given to injured personnel who are contaminated. Station personnel, trained in first aid, shall assist contaminated personnel either at the scene of the accident or in the First Aid Room. Provisions have been made to ensure contaminated and injured personnel receive specialized medical treatment if necessary. The Magruder Memorial Hospital has agreed to accept contaminated patients for emergency medical and surgical treatment and/or observation. If affected personnel must be transported, measures shall be taken to prevent the spread of contamination.

#### 7.7.4 Medical Transportation

Ambulance service for Davis-Besse is provided for by the Carroll Township Emergency Medical Service.

#### 7.7.5 Medical Treatment

Arrangements for hospital and medical services for injured or contaminated/over-exposed personnel are provided for by the Magruder Memorial Hospital, REMS Corporation, the Peter Bent Brigham Memorial Hospital in Boston, Mass., and local physicians.

#### 7.8 Reentry and Recovery

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7.8.1 The Emergency Duty Officer and the Station Operations Manager have the joint responsibility for determining and declaring when an emergency situation is stable and the Station is ready to enter the reentry and recovery phase. The reentry and recovery phase of the Emergency Plan consists of planned and deliberate actions taken to return the plant to pre-accident levels of radiation and contamination or to conditions which are acceptable and controllable for an extended period of time.

7.8.2

## Table 1

#### EMERGENCY CLASSIFICATIONS AND THE DEGREE OF INVOLVEMENT BY PARTICIPATING GROUPS

Emergency	Necessity for Protective Actions		Necessity for	Degree of Participation By Various Organizations		
Classification	Onsite	Offsite	Corrective Actions***	TECo Onsite Offsite		Offsite Agencies
Unusual Event	None	None	Possible	Notifi- cation Status*	Notifica- tion Status	Notifica- tion Status**
Alert	Possible	None	Possible	Standby Status**	Standby Status	Standby Status
Site Emergency	Probable	Possible	Probable	Action	Action	Action
General Emer- gency	Probable	Probable	Required	Action	Action	Action

\* Notification Status: Organization informed of situation onsite.

\*\*\* Standby Status:

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Organization staffs preplanned centers, establishes communications, and assembles emergency teams.

Action might include local fire support, ambulance service, medical assistance, or radiological assessment.

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TABLE 2 TABLE 2 MARQUEN, LOCATION AND NESTONSE CONSIDERATIONS FOR DEPAGENCIES

Notaal Bra-30 ato; Off hta-60 ata Normal New Jo uta Otf New 60 min Normal Ike 30 ata 011 Hr. 50 ata ineer di at al y Noreal Br. 30 ata 011 hr. 60 ata 5 wave distaily ala -2 hours D-2 hours Variable TIME 93 DIREC CONTROL CONTRA Basery Dairy Officer (1) (Red Shift Supervisor) MRC Communicator (1) State Communicator (1) Fublic Relations (1) County formunicator (1) County formunicator (1) BRD County formunicator (1) BRD County formunicator (1) BRD 38533 888888§ 2888883 CENERAL AMERICENCY (10) 22231 223 888i8 888 6 88 CONTRACT ROOM SHIT SUPERVISE (JAICETA EDO) Anari Shift Superviser Shift Tech Adviser Shift Tech Adviser Non-Livenard Opta CPMS SUPPORT CERTER First Aid Firs Brigada C & Rad Tester EBRC STTWT CHIER Emergen y Director Operation Director Eag Sup Director Anh & Lug Director Coty Nei Director VP - Fut Relations Staff Frisonnel TEON SUPPORT CARE Scatton for Mugr Communicator Flant Staff Technical Engr Clean & HP Muc Engi Mugi Flant Lic Sys Engi Flant Nuc Sys Engi Other NiC Personnel Emerg Ops Hogr Public letations Flant (ye Muge Opus Engr Opus Supre PERSONNEL. Nalot Engr As required: Inmediately As required: Normal Hr. 30 min Off Hr. Normal Bra-30 min; Off Bra-60 min Notional Nes 30 ato 011 Nes 60 ato Inmudiately Normal Hrs 30 min 011 Hrs 60 min 1-2 bours 1-2 hours Variable TINE 81833 ຣຣງຣຣ 3888885 8888 888 3 888 (1) 35 SITE DERCENCY DIFAC CONTROL CENTER For a bury differ (Rel Shift Supervisor) IRC Consententents NBC Consentents of Consentents (State Consentents) (Curry Consentents) (Curry Consentents) (Curry Consentents) CONTRACT ROCT Shift Supervises (Anteria 100) Anet Shift Supervises Shift Tech Advisor Bon-Licensed Opre-OPNS SUPPORT CENTER\* First Aid Fire Brigade C & Red Tester Diffe Supposi CiNTER Staff may be partially mobilized TECH SUPPORT CENTER Statton Ope Mage Communication Plant Staff Technical Engr Nuc Engr Mugr Flant 16C Sys Engr Flaut Nuc Sys Engr Other NNC Personnel Plant Ope Nuge Opne Engr Opne Super Emerg Ops Hugs Public Relations PERSONNEL Plant Staff Maint Engr As required: Inwediately As required: Normal Hre 30 min 011 Hre 60 min Normal Nea-30 ato; Off Nea-60 ato As required: Normal Hrs 30 min 0ff Hrs 60 min [umediately Normal Nrs 30 min Off Nrs 60 min 1-2 hours 1-2 hours Variable TIME 3 88388 888888§ 3335 888 88818 333 (1) 23 DIERG CONTROL CENTER Energ Duty Officer (Rel Shift Supervisor) NRC Communicator CURTING, MONE BALIK SUPERTIAO (INCERT 200) Anot Shift Supervisor Shift Tech Advisor Nun-licensed Opra OPPS SUPPORT CENTERS First Aid Fire brigade C & Rad Tester TECH SUPPORT CENTER Station Ope Hoge Communication Flant Staff Technical Engr Chem & HF State Communicator Public Selations Courty Communicator Cotporate Mgt. Comm. BMTs ALERT Nuc Enge Mnge Plant 166 Sya Enge Plant Nuc Sya Enge BURN SUFFORT CENTER Staff Alerted Other NRC Personnel Plant Ope Mage Opna Engr Opna Supur Ewerg Ops Mugr Public Relations P. S.M. SAUNDAYA. Plant Staff Haint Engr As required: Issuediately Issuediately Alerted Alerted Alarted Alacted TINE Alerted 2 2222 3 1388 33818 THUSUAL EVENT CURTING. MORE Sail (Supervised (Interime 100) Assi Shiff Supervised Control Room Opt Sailt Tech Antisan Blan-licensed Opta Riant Ope Physi Opta Supr OPPES SUPPORT CENTER-First Aid First Brigade C.6. Rad Tester Energ Duty Officer Energ Plan Supervisor Station Ope Mage PERSONNEL. faint Engr TLISNO STIS HO

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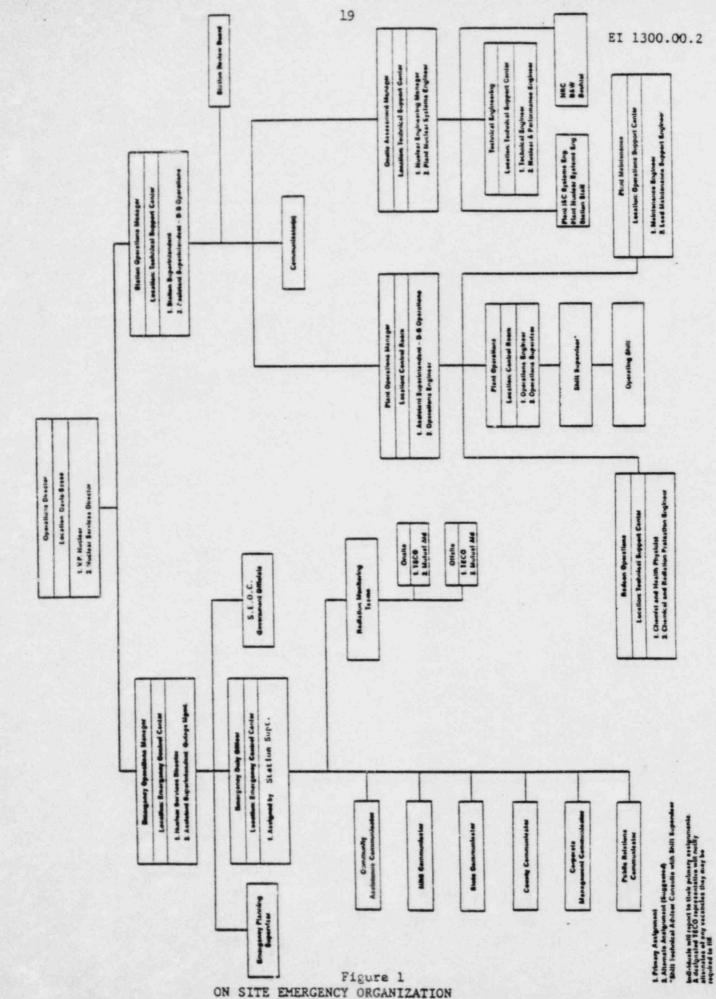
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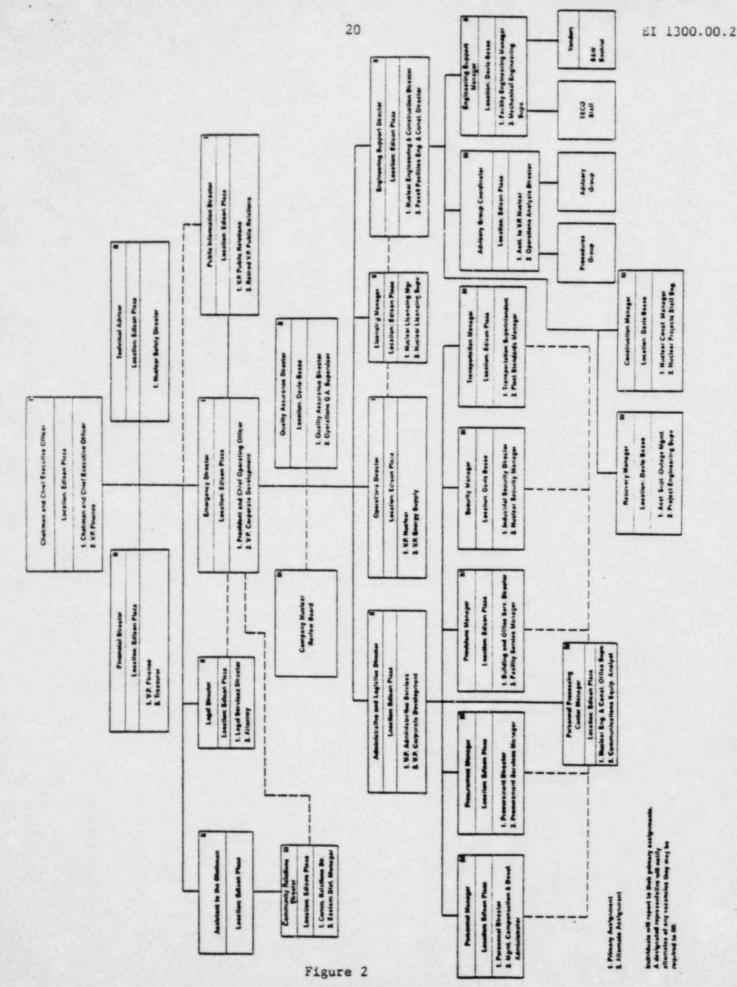
Note: All time requirement: are based on optimum response conditions

\*Includes the Health Physics Monitoring Room

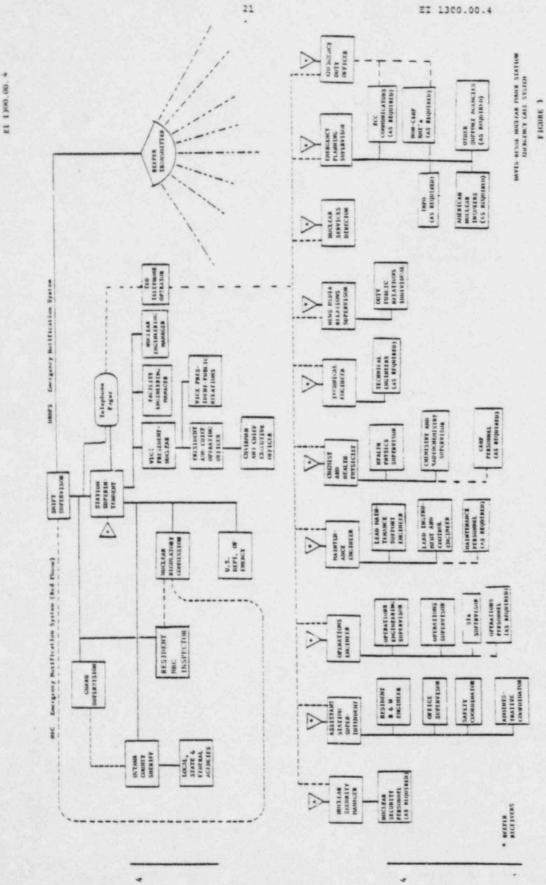
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VABLE 2





OFF SITE EMERGENCY ORGANIZATION



END

Davis-Besse Nuclear Power Station

Unit No. 1

Emergency Plan Implementing Procedure EI 1300.01

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Emergency Plan Activation

Record of Approval and Changes

Prepared by G. J. Reed	
	5/30/80 Date
Submitted by C. E. Wells	
Section Head	6/13/80
Recommended by	Date
SRB Chairman	- 4/13/80
QA Approved ALA	Date
Quality Assurance Manager	
Approved by Thomas	Date
Station Superintendenc)	8/18/50
·····	Date

2.	SRB Recommendation A. W. Bridan A. Bridan	4/10/81	QA Approved NA 1 NH 2 NH	Date	Sta. Supt. Approved Date Mung 4/16/81 Mung 7/23/81 TO Mung 7/1182
4 -	Andang	10/19/82			TO Mung 3/20/03

#### 1. PURPOSE

To provide guidelines for conditions at which specific emergency classifications must be declared.

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2. SCOPE

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To specify emergency action levels and personnel judgments that are consistent with the emergency classification scheme depicted in Appendix 1 of NUREG-0654, Rev. 1.

- 3. REFERENCES
  - 3.1 The Davis-Besse Nuclear Power Station Emergency Plan
  - 3.2 Final Safety Analysis Report, DBNPS
  - 3.3 Technical Specifications, DBNPS Unit No. 1, Appendix A and B to License No. NPF3
  - 3.4 Station Response to Emergencies, EI 1300.00
- 4. DEFINITIONS
  - 4.1 <u>Unusual Event</u> Event(s) are in progress or which have occurred that indicate a potential degradation of the level of safety of DBNPS.
  - 4.2 <u>Alert</u> Events are in progress or have occurred which involve an actual or substantial degradation of the level of safety of DBNPS.
  - 4.3 <u>Site Emergency</u> Events are in progress or have occurred which involve actual or likely major failures of DBNPS functions needed for the protection of the public. There also exists a <u>significant</u> actual or potential release of radioactive material.
  - 4.4 <u>General Emergency</u> Events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with the potential for loss of containment integrity, and/or involve the potential for a release of radioactive particulates or gases offsite of a magnitude to exceed regulatory limits.
  - 4.5 <u>Emergency Action Levels (EAL's)</u> Radiological dose rates, specific contamination levels of airborne, waterborne, or surface-deposited concentrations of radioactive materials; or specific instrument readings and indications (including their rate of change) that may be used as thresholds for initiating such specific emergency measures as designating

a particular classification of emergency, initiating a notification procedure, or initiating a particular protective action.

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#### 5. EMERGENCY MEASURES

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5.1 The Shift Supervisor, when informed that abnormal or emergency conditions (real or potential) have arisen, shall perform the necessary actions in the priority listed below:

- 5.1.1 Ensure that the immediate actions (e.g., use of Emergency Procedures) are taken for the safe and proper operation of the plant.
- 5.1.2 Assess the information available from valid indication and using Table 1, initially classify the situation with the following considerations:
  - a. The specific emergency action levels described in Table 1 are not all inclusive. The Shift Supervisor or Emergency Duty Officer shall declare an appropriate emergency classification whenever, in his judgment, the station status warrants such a declaration. (Refer to Step 5.2.2 for guidance.)
  - b. Reaching these levels over a period of days rather than hours is not sufficient to declare the appropriate classification.
  - c. Some of the emergency action levels described are not, by their very nature, intended to be used during maintenance and/or testing situations where abnormal temperature, pressure, equipment status, etc. is expected.
  - d. All of the emergency action levels shall be considered if the plant is, or was (immediately prior to the emergency condition) in Mode 1 operating at a high power level, except for those conditions noted in the Index of Emergency Action Level Conditions, Page 4.
- 5.1.3
- 3 Use the appropriate checklist from either the Unusual Event (EI 1300.02), Alert (EI 1300.03), Site Emergency (EI 1300.04), or General Emergency (EI 1300.05) procedure to ensure that immediate notification requirements are met and the proper Emergency Plan response is taken.

5.1.4 Perform additional emergency actions as time and conditions permit.

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5.2 Operator judgment plays an important role in ensuring that during any specific event the appropriate actions are performed.

- 5.2.1 Examples:
  - a. For an abnormally high lake level, operator judgment should take into consideration the lake level, wind direction, weather conditions, etc., before announcing a flood warning and initiating personnel evacuation. During a previous incident, personnel were evacuated during flood warning conditions, however it was found that this was unnecessary since the weather then cleared and no flood or hazardous situation occurred.
  - b. For localized incidents that may affect only small areas, operator judgment should take into consideration that an alarm, when sounded, could be followed by some amplifying instructions to aid personnel response. During a previous incident, an individual was injured requiring medical assistance. The Initiate Emergency Procedures alarm was sounded, however verbal instructions via the gai-tronics system could have been used to prevent unneeded personnel involvement and assembly.
- 5.2.2 For abnormal plant conditions that are not specifically covered in the Table 1 emergency action levels, the following criteria shall be used to assist the Shift Supervisor or Emergency Duty Officer in classifying the event based on their judgment.
  - a. Unusual Event Other plant conditions exist that warrant increased awareness on the part of the plant operations staff or State and/or local offsite authorities which are not covered under any other existing station procedure.
  - b. Alert Other plant conditions exist that warrant precautionary activation of the Technical Support Center and Emergency Control Center and placing other key emergency personnel on standby.

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- c. Site Emergency Other plant conditions exist that warrant activation of emergency centers and monitoring teams or a precautionary notification to the public near the site.
- d. General Emergency Other plant conditions exist, from whatever source, that make release of large amounts of radioactivity in a short time period possible, e.g., any core melt situation.

5.3

Plant conditions should be continually evaluated to ensure the proper emergency classification is being utilized and the classification upgraded or downgraded by the Shift Supervisor and Emergency Duty Officer as conditions dictate per Table 1 and Steps 5.1.2 and 5.2.2 above.

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INDEX OF EMERGENCY ACTION LEVEL CONDITIONS

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	Condition	Page No(s).
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	Plant Shutdown Functions	8
	Coolant Pump Seizure	9
	Loss of Assessment Functions	10
	Control Room Evacuation	11
3	*Abnormal Coolant Temperatures	12
1	*Abnormal Primary Leak Rate	13-14
	Abnormal to Primary/Secondary Leak Rate	15-16
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	*High Radiation Levels in Plant	23
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\*NOTE: When evaluating the EAL's in Table 1, the plant must be in Mode 1 or had been in Mode 1 operating at a high power level when the event initiated, except for those annotated conditions above which have been broken down and noted, as applicable, in their respective sections of Table 1.

### TABLE 1

## SAFETY SYSTEM FUNCTIONS

Condition	Indication(s)	Emergency Classification
Unplanned Initiation of ECCS with Flow into Core Indicated	<ul> <li>Any three of the four fol- lowing with flow indicated:</li> <li>1. HPI low flow alarm and/or LPI low flow alarm (on then off)</li> <li>2. HPI and/or LPI pump status lights indicate pump(s) running</li> <li>3. HPI and/or LPI pump current meters indicate pump(s) running</li> <li>4. HPI and/or LPI pump discharge valves indicate open</li> </ul>	Unusual Event (EI 1300.02)
Loss of Containment Integrity	<ul> <li>Any Op of the four following requiring plant shutdown per T.S. 3.6.1.1:</li> <li>1. Any penetrations required to be closed during accider conditions that are not: <ul> <li>A. Capable of being closed by the Safety Features Actuation System, OR</li> <li>B. Closed by manual valves blind flanges, or deactivated automatic valves secured in their closed position except as provided in T.S. 3.6.3.1 Table 3.6-2</li> </ul> </li> <li>2. An equipment hatch is not closed and sealed</li> <li>3. An airlock is not operable per T.S. 3.6.1.3</li> <li>4. A sealing mechanism associated with a penetration (e.g., welds, bellows, or O-rings) becomes inoperable</li> </ul>	L

NOTE: For the above asterisked (\*) classification(s) the plant can be in any Mode for the listed EAL's to be applicable.

## TABLE 1

# SAFETY SYSTEM FUNCTIONS (Con't)

Condition		Indication(s) Cl	Emergency Lassification
Loss of Engineered Safety Feature	1.	A Safety Features Actuation System (SFAS) functional unit shown in T.S. Table 3.3-3 becomes inoperable per T.S. 3.3.2.1 and requires plant shutdown OR	Unusual Event (EI 1300.02)
	2.	The Boron Injection Flow Path (operating) or Borated Water Sources (operating) become in- operable and require plant shutdown per T.S. 3.1.2.2 and 3.1.2.9	
Failure of Safety Related Safety or Relief Valve to Close	1.	Reactor Coolant System: A. Indication of flow through Pressurizer Reliefs (red light on Panel C5798 or C5799) AND B. RCS Pressure drop to <1600 psig	Unusual Event (EI 1300.02)
	2.	<ul> <li>Main Steam System: (any 2 of 3)</li> <li>A. Rapid and continuing decrease in Steam Gen- erator pressure to &lt;500 psig</li> <li>B. Rapid RCS cooldown rate</li> <li>C. Audible steam relief noise in the Control Room lasting &gt;10 minutes</li> </ul>	1 1 1 1
Loss of Steam Feed Rupture Control System	1.	A Steam Feed Rupture Con- trol System (SFRCS) Func- tional Unit as shown in T.S. Table 3.3-11 becomes inoperable per T.S. 3.3.2.2 and requires plant shutdown	Unusual Event (EI 1300.02)

## TABLE 1

## PLANT SHUTDOWN FUNCTION

Condition		Indication(s)	Emergency Classification
Loss of any system which precludes placing the plant in cold shutdown	1.	<ul> <li>Any of the following systems become inoperable:</li> <li>A. Service Water System (both trains)</li> <li>B. Decay Heat System (both trains)</li> <li>C. Component Cooling Water (both trains)</li> </ul>	Alert (EI 1300.03)
Loss of any system which precludes placing the plant in hot shutdown	1.	The following systems become inoperable: A. Makeup System and HPI System OR B. Main Feedwater System and Auxiliary Feed- water System	Site Emergency (EI 1300.04)
Failure of Reactor Pro- tection System to in tiate and complete a trip	1.	Any time plant parameters meet conditions requiring a trip and RPS fails to initiate and complete a trip which brings the reactor subcritical	Alert (EI 1300.03)

# TABLE 1

## COOLANT PUMP SEIZURE

Condition		Indication(s)	Emergency Classification
Coolant pump seizure with fuel damage indicated by Iodine sample > T.S. 3.4.8	1. 2.	Reactor Coolant System flow indication decreases rapidly AND Confirmed Primary Coolant sample results indicate >1.0 µCi/Gram dose equiv- alent I-131	Alert (EI 1300.03)

# TABLE 1

### LOSS OF ASSESSMENT FUNCTIONS

Condition		Indication(s)	Emergency Classification
Control Room Indications or Alarms on Process or Effluent Parameters NOT functional to an extent requiring plant shutdown or other significant loss of assessment or communica- tion capability	<u>Any</u> 1. 2.	of the Following: Radiation monitoring instrumentation < min- imum channels operable requiring shutdown per T.S requirements OR RE2024A, B & C, RE2025A ,B & C and Backup Grab Sample capability become in- operable OR	
	3.	Meteorological monitoring instrumentation < min- imum necessary to perform offsite dose calculations (i.e. wind speed, wind direction, and stability class) OR	
	4.	Post-accident instrument- ation < minimum channels operable requiring plant shutdown per T.S. requirements (T.S. 3.3.3.6 OR	)
	5.	Complete failure of the plant telephone system and Gai-tronics system	
All annunciator alarms and station computer lost	1.	Any simultaneous loss of all annunciator alarms and the station computer	Alert (EI 1300.03)
All annunciator alarms and station computer lost >15 minutes during plant transient	1.	Complete loss of all annunciator alarms and station computer lasting more than 15 minutes AND	Site Emergency (EI 1300.04)
	2.	Plant transient initiated or in progress	

### TABLE 1

# CONTROL ROOM EVACUATION

Condition		Indication(s)	Emergency Classification
Evacuation of Control Room required	1.	Any evacuation of the Control Room with shut- down cortrol established locally within 15 minutes	Alert (EI 1300.03)
Evacuation of Control Room and Control <u>NOT</u> estab- lished locally within 15 minutes	1.	Any evacuation of the Control Room with shut- down control <u>NOT</u> estab- lished locally within 15 minutes	Site Emergency (EI 1300.04)

#### TABLE 1

## ABNORMAL COOLANT TEMPERATURES

Condition		Indication(s)	Emergency Classification
Core Subcooling is Determined to be less than normal (10°)	1.	As determined by Sub- Cooling graph or T Meter Indication sat (TD14950 or TD14951) AND	Unusual Event (EI 1300.02)
	2.	As indicated by the difference between Pres- surizer Temperature and $T_h$ (use incore thermo- couples temperature if $T_h$ meter is off-scale)	
Coolant Temperatures and/or pressures outside of Technical Specification limits	1.	As determined by the combination of Reactor Coolant Core Outlet Pressure and/or Outlet Temperature exceeding the safety limits of T.S. 2.1.1	Unusual Event* (EI 1300.02)

3 NOTE: For the above asterisked (\*) classification(s), the plant can be in any mode for the listed EAL's to be applicable.

## TABLE 1

# ABNORMAL PRIMARY LEAK RATE

Condition		Indication(s)	Emergency Classification
Leak Rate Requiring Plant Shutdown by TS Section 3.4.6.2	1.	RCS Water Inventory Balance indicates >1 GPM unidentified leakage or >10 GPM identified leakage OR	Unusual Event (EI 1300.02)
	2.	Measurement of controlled leakage from the Reactor Coolant Pump seals is >10 GPM total OR	
	3.	Leakage from any RCS pres- sure isolation valve >5 gpm as listed in TS Table 3.4-2	
Leak Rate >50 GPM but within High Pressure Injection system capacity	<u>Any</u> 1.	Two of the Four Following: Makeup Tank level decreasing approximately two inches per minute while RCS temperature remains steady	Alert* (EI 1300.03)
	2.	Increased activity on Con- tainment Vessel Airborne Monitor(s) RE 4597AAA, AAE AAC, or RE 4597BAA, BAB, BAC	
	3.	Increase in Normal Sump level on level instruments LI 1546 A or B	
	4.	RCS Water Inventory Balance indicates >50 GPM leakage	
Loss of Coolant Accident > High Pressure Injection system capacity	1.	Pressurizer level and pressure decreasing rapidly without an associated change in RCS temperature (RCS tempera- ture/pressure reach saturation conditions) OR	Site Emergenc (EI 1300.04)

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### TABLE 1

#### ABNORMAL PRIMARY LEAK RATE

Condition		Indication(s)	Emergency Classification
	2.	Containment pressure psia and Reactor Cool System pressure <400	ant

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NOTE: For the above asterisked (\*) classification(s), the plant can be in any Mode for the listed EAL's to be applicable.

## TABLE 1

# ABNORMAL PRIMARY TO SECONDARY LEAK RATE

Condition	ndication(s)	Emergency Classification
Leak Rate Requiring Plant Shutdown by TS 3.4.6.2	RCS Water Inventory Balance indicates >1 GPM total Primary to Secondary leakage	Unusual Even (EI 1300.02)
	And the Following: 1. Main Steam Line Radiation monitor(s) (RE 600 and/or RE 609) in the "Analyze Mode" to detect N-16 indicate increased activit OR	ту
	<ol> <li>Condenser Vacuum dis- charge radiation monitor(s (RE 1003A (B)) indicate increased activity AND</li> </ol>	i)
	<ol> <li>Unexplained Makeup tank le decrease while Reactor Coolant System temperature remains constant</li> </ol>	
Rapid failure of Steam Generator tubes (e.g., several hundred gpm primary to secondary leak rate!)	Main Steam Line Radiation monitor(s) (RE 600 and/or RE 609) in the "Analyze Mode" to detect N-16 indicate increased activity, or Con- denser Vacuum discharge radia- tion monitor(s) (RE 1003 A (B)) indicate increased activity	Alert (EI 1300.03)
	<ul> <li>And One of the Following:</li> <li>1. Rapid drop in RCS pressure</li> <li>2. Rapid decrease in Pressurizer and Makeup Tank levels</li> <li>3. Safety Features Actuation System (SFAS) Level 2 activates</li> </ul>	•

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## TABLE 1

# ABNORMAL PRIMARY TO SECONDARY LEAK RATE

Condition		Indication(s)	Emergency Classification
	4.	Main Steam line radiation monitors in the "Gross Mod indicating more than 15000 cpm net; background equals 1000 cpm	e"
Rapid failure of one Steam Generator tube and loss of offsite power	1.	Noticable drop in RCS pressure and pres- surizer level AND	Alert (EI 1300.03)
	2.	The 13.8 KV BUSES are deenergized AND	
	3.		
Rapid failure of Steam Generator tubes (several hundred GPM leak rate	1.	Indications for leak rate of 400-700 GPM AND	Site Emergenc (EI 1300.04)
indicated) and loss of offsite power	2.	The 13.8 KV BUSES are deenergized	

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# TABLE 1

# CORE FUEL DAMAGE

Condition		Indication(s) C	Emergency lassification
High Coolant activity sample Requiring Plant Shutdown by Technical Specifications for Iodine (1.S. 3.4.8)		Failed Fuel Detector (RSH 1998) alarm with confirmed sample results indicating >1.0 µCi/Gram Dose Equiv- alent I-131 AND Plant Shutdown required	Unusual Event (EI 1300.02)
Very High Coolant activity		Failed Fuel Detector (RSH 1998) "RC Letdown Activity High" alarm AND Confirmed sample results	
Com damaa wish i-		indicate >300 µCi/Gram I-13	
Core damage with in- adequate core cooling determined	1.	Confirmed primary coolant sample results indicate: A. >1.0 µCi/Gram Dose equivalent I-131, and B. >100/Ē µCi/Gram specific activity, AND	Site Emergency (EI 1300.04)
	2.	Hot Leg temperature >620°F OR	
	з.	Incore thermocouple temper- atures increasing to >700°F	
Core damage with other plant conditions making a release of large amounts of radioactivity	1.	Confirmed primary coolant sample results indicate >300 µCi/Gram I-131 AND	General Emergen (EI 1300.05)
possible	2.	Incore thermocouple temper- atures indicate >2000°F AND	
	3.	Containment radiation level is > 10 <sup>4</sup> R/hr OR	
	4.	Containment pressure is >40 psia	

## TABLE 1

# CORE FUEL DAMAGE

Condition	Indication(s)	Emergency Classification
Core melt situations	Any one of the following sequences occurs with a	General Emergenc
	concurrent likely failure of	(EI 1300.05)
	containment imminent:	(21 1900.03)
	1. Either a small or large	
	LOCA occurs with a con-	
	current failure of the	
	ECCS to perform leading	
	to severe core degradation	
	or melting	
	2. A transient is initiated	
	by a loss of the main	
	feedwater system followed	
	by a failure of the emer- gency feedwater system	
	for an extended period wit	h
	core melting resulting	
	3. A transient occurs	
	requiring operation of	
	shutdown systems with	
	failure to trip which	
	results in core damage,	
	or additional failures of	
	core cooling and makeup	
	systems occur which	
	lead to a core melt	
	4. A failure of offsite	
	and onsite power along	
	with total loss of emer- gency feedwater makeup	
	capability occurs for	
	several hours which leads	
	to a core melt	
	5. A small LOCA occurs with	
	initially successful ECCS,	
	however a subsequent fail-	
	ure of RCS heat removal	
	systems over a period of	
	several hours leads to a	
그는 그가 가지 않는 것이 같아.	core melt	

## TABLE 1

### LOSS OF FISSION PRODUCT BARRIERS

	Conditio	n	Indication(s)	Emergency Classification		
Loss of 2 of 3 fission product barriers with a potential loss of the 3rd barrier			Any Two of the following conditions exist and the Third is imminent: 1. Fuel clad is ruptured as indicated by grab sample results 2. A rupture of the RCS has been confirmed 3. Containment integrity ha been breached and cannot be restored	S		
NOTE :	Other set the above	ctions of 1 e three cor	Table 1 can be used for guidanc nditions, as follows:	e in determining		
Site Eme		For item 1 Site Emerg cations.	l, refer to "Core Fuel Damage" gency levels for sample result	at the Alert and values and indi-		
	b.	For item 2, refer to "Abnormal Primary Leak Rate" at the Alert and Site Emergency levels for indications of a loss of primary coolant.				
Containmer			3, refer to "Safety System Func at Integrity condition at the U indications of a breach in Con	nusual Event		

#### TABLE 1

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### FUEL HANDLING ACCIDENT

Condition		Indication(s) (	Emergency Classification
Fuel Handling Accident which results in the release of radioactivity to Containment or Spent Fuel Pool area	1.	Direct information from fuel handling personnel indicating that an irradiated fuel assembly has been damaged and radioactive gases are escaping AND	Alert* (EI 1300.03)
	2.	Fire Detection System/ Radiation Monitoring System (FDS/RMS) alarms with high radiation monitor reading printed out on data logger OR	
	3.	Local Radiation Monitoring Alarm Station alarms both audibly (horn) and visually (green light goes OFF and red light comes ON) and is reported to the Control Roo	
Fuel Handling Accident which results in SFAS actuation	1.	Indications of fuel hand- ling accident which results in the release of radio- activity to Containment or Spent Fuel Pool area AND	Site Emergency (EI 1300.04)
	2.	SFAS incident level one actuation on radiation in Containment or isola- tion of ventilation in fuel handling area based on radiation	

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NOTE: For the above asterisked (\*) classification(s), the plant can be in any Mode for the listed EAL's to be applicable.

# TABLE 1

# ABNORMAL CONTAINMENT ATMOSPHERE

Condition		Indication(s)	Emergency Classification
Increasing Containment radiation, pressure, and temperature	1.	Two of the Following: Containment high range monitor(s) (RE 4596A or B indicate greater than 50 R/hr) Containment pressure (PI 2000, PI2001, PI2002, PI 2003) indicates >17 psia	Alert (EI 1300.03)
	3.	Containment average air temperature (TI1356, TI 1357, TI1358) indicates >170°F	
High Containment radia- tion, pressure and		Two of the Following: Containment high range	Site Emergency (EI 1300.04)
temperature		radiation monitor(s) (RE 4596A or B indicate greater than 50 R/hr)	
	2.	Containment pressure (PI 2000, PI2001, PI2002, PI	
	3.	2003) indicates >20 psia Containment average air temperature (TI1356, TI 1357, TI1358) indicates >200°F	
	4.	Safety Features Actuation System (SFAS) functions have activated	
Very High Containment		Two of the Following:	General Emergenc
radiation and pressure	1.	Containment high range radiation monitor(s) (RE 4596A or B indicate	(EI 1300.05)
	2.	greater than 10,000 R/hr) Containment pressure (PI 2000, PI2001, PI2002, PI	
	3.	2003)indicates >40 psia Safety Features Actuation System (SFAS) functions have activated and Con- tainment Spray is operatin	g

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#### TABLE 1

### ABNORMAL EFFLUENT RELEASE

Condition	Indication(s)	Emergency Classification	
Effluent Release > limits allowed by E.T.S. 2.4.1 or E.T.S. 2.4.3	Confirmed analysis results for a gaseous or liquid release indicates > the limits given in the Environ- mental Technical Specifica- tions	Unusual Event (EI 1300.02)	
Effluent release >10 times instantaneous limits allowed by E.T.S. 2.4.1 or E.T.S. 2.4.3	Confirmed analysis results for a gaseous or liquid release indicates >10 times the instantaneous limits given in the Environ- mental Technical Specifica- tions	Alert (EI 1300.03)	

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NOTE: For the above asterisked (\*) classification(s), the plant can be in any Mode for the listed EAL's to be applicable.

#### TABLE 1

## HIGH RADIATION LEVELS IN PLANT

Condition	Indication(s)	Emergency Classification
General area radiation 1. levels or high airborne radioactivity >1000 times normal from an unidentified source, lasting more than 30 minutes	Fire Detection System/ Radiation Monitoring System (FDS/RMS) Console Alarm with high radiation monitor reading displayed on CRT and printed out on data logger OR	Alert* (EI 1300.03)
2.	Local Radiation Monitoring Alarm Station alarms both audibly (Horn) and visuall (green light goes off and red light comes on) and is reported to the Control Room AND	у
3.	An area radiation survey or airborne radioactivity sample indicates activity levels >1000 times normal	

NOTE: For the above asterisked (\*) classification(s) the plant can be in any Mode for the listed EAL's to be applicable.

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### TABLE 1

	Condition		Indication(s)		Emerge ssific	
radiati indicat	ed or actual on readings that e a potential dose	1.	Station Vent Monitor (RE2024C or 2025C) read- ing >0.1 µCi/cc Xe-133*		Alert* (EI 13	00.03)
500 mR the Sit	mR Whole Body or Child Thyroid at e Boundary using meteorology.	2.	for 2 hours or readings which will give an equiv- valent dose in <2 hours Station Vent Monitor (RE2024B or 2025B) read- ing >7.2 x $10^{-6} \mu Ci/cc I-13$ for 2 hours or readings which will give an equivaled dose in <2 hours	31	NOTE :	(These are the appli- cable con- centrations however the can not be obtained from the presently
*NOTE :	This concentra- tion is based on a stability class of F and wind speed of 2 mph; if actual meteorology is used, this concentration may be higher	4.	Radiation Monitoring Team reports radiation levels at Site Boundary <50 mR/hr for an incident projected to la 2 hours or reports of read- ings which will give an equivalent dose in <2 hours Radiation Monitoring Team reports I-131 concentration >1.1 x $10^{-7} \mu$ Ci/cc at Site Boundary	r ast -		installed instrumenta- tion. They are to be used when the Kamen High range mon- itors are installed.
tion re cate a	ed or actual radia- adings that indi- potential dose of	1.	Grab sample, or Station Vent Monitor (RE2024C or 2025C) reading >1.0 µCi/cc			mergency* 00.04)
Child T Boundar meteoro		2.	Xe-133* for 2 hours or readings which will give an equivalent dose in <2 hours	n	NOTE :	(These are the appli- cable con- centrations however they can not be obtained from the presently
*NOTE :	This concentra- tion is based on a stability class of F and wind speed of 2 mph; if actual meteorology is used, this concentration	3.	Radiation Monitoring Team reports radiation levels >500 mR/hr at the site boundary for an incident projected to last 2 hours or which will give an equiv- alent dose in <2 hours	v-		installed instrumenta- tion. They are to be used when the Kamen High range

# ABNORMAL RADIATION LEVELS AT SITE BOUNDARY

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#### TABLE 1

#### ABNORMAL RADIATION LEVELS AT SITE BOUNDARY

Condition		Indica*ion(s)	Emergency Classification
may be higher	4.	Radiation Monitoring Team reports I-131 concentratio >1.1 x $10^{-6} \mu$ Ci/cc at the Site Boundary	monitors ns are in- stalled.

NOTE: For the above asterisked (\*) classification(s), the plant can be in any Mode for the listed EAL's to be applicable.

#### TABLE 1

### ABNORMAL RADIATION LEVELS AT SITE BOUNDARY

Condition	Indication(s)	Emergency Classification	
Projected or actual site boundary radiation readings corresponding to a whole body dose of 50 mr/hr for 1/2 hour or 500 mr/hr for 2 minutes using adverse meteorology or five times these levels for a thyroid dose. *NOTE: These are the ap- plicable concen- trations, however they cannot be ob- tained from the pre- sently installed in- stalled instrumenta- tion. They are to used when the Kamen High range monitors are installed in the near future.	<pre>from a non-continuous source) occurs with: 1. Station vent monitor     RE 2024C or 2025C readings     and analysis indicating     9.6 x 10<sup>-2</sup> µCi/cc* for 1/2     hour or .96 µCi/cc* for 2     min.     OR 2. Station vent monitor RE     2024B or 2025B readings     and analysis irdicate     7.2 x 10<sup>-6</sup> µCi/cc* for     for 1/2 hour or 7.2 x</pre>	Site Emergency <sup>3</sup> (EI 1300.04)	
Projected or actual site boundary radiation read- ing corresponding to a whole body dose of 1 R/hr or a thyroid dose of 5 R/hr using actual meteorology.	<ul> <li>A radiological release occurs with:</li> <li>1. Projected doses at the site boundary equate to 1 R/hr whole body or 5 R/hr thyroid (or higher) using actual meteoroligi- cal data. OR</li> <li>2. A Radiation Monitoring Team at the site boundary reports radiation levels at 1 R/hr or 2.27 x 10<sup>-6</sup> µCi/cc I-131 (or higher).</li> </ul>	General Emergenc (EI 1300.5)	

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NOTE: For the above asterisked (\*) classification(s), the plant can be in any Mode for the listed EAL's to be applicable.

### TABLE 1

#### CONTAMINATED PERSONNEL

Condition		Indication(s)	Emergency Classification
Transportation of con- taminated injured in- dividual(s) offsite	1.	Any event which requires transportation of a con- taminated injured indi- vidual to an offsite medical facility	Unusual Event* (EI 1300.02)

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NOTE: For the above asterisked (\*) classification(s), the plant can be in any Mode for the listed EAL's to be applicable.

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# TABLE 1

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# MAJOR STEAM LEAK

Condition	Indication(s)	Emergency Classification	
Major Steam Leak with <u>NO</u> Primary to Secondary leakage	Increasing Containment pres- sure (if leak is inside Con- tainment) or unusually loud noise outside Containment <u>And One of the Following</u> : 1. Steam and Feedwater	Unusual Event (EI 1300.02)	
	Rupture Control System (SFRCS) initiates 2. Main Steam Pressure(s) and/or Steam Generator Pressure(s) drop to <300 PSIG		
Major Steam Leak with >10 GPM Primary to Secondary Leak Rate	<ol> <li>Indication of a Major Steam Leak AND</li> </ol>	Alert (EI 1300.03)	
	<ol> <li>Main Steam Line Radiation Monitor(s) (RE 600 and/or RE 609) in the "Analyze Mode" to detect N-16 indicate increased activity, AND</li> </ol>		
	<ol> <li>RCS Water Inventory Balance indicates &gt;10 GPM Primary to Secondary leakage</li> </ol>	e	
	<ol> <li>Main Steam line radiation monitors in the "Gross Mod indicating more than 15000 cpm net; background equals 1000 cpm</li> </ol>	le''	
Major Steam Leak with >50 GPM Primary to Secondary leak rate and	1. Indication of a Major Steam Leak AND	Site Emergency (EI 1300.04)	
fuel damage indicated	<ol> <li>Main Steam Line radiation monitor(s) (RE 600 and/or RE 609) in the "Analyze Mode" to detect N-16 indicate increased activity AND</li> </ol>		

# TABLE 1

## MAJOR STEAM LEAK

Condition	Indication(s)	Emergency Classification
	RCS Water Inventory Balan indicates >50 GPM Primary to Secondary Leak rate AND	
	Confirmed Primary Coolant sample results indicate Dose Equivalent I-131 above acceptable limits of T.S. Figure 3.4-1 AND	
	Main steam line radiation monitors in the "Gross Mode" indicating more than 150,000 cpm net; background equals 1,000 cpm.	

## TABLE 1

### MAJOR ELECTRICAL FAILURES

Condition		Indication(s)	Emergency Classification
Loss of offsite power or of cnsite AC power capability	1.	Both Emergency Diesel Generators and the Main Generator out of service simultaneously OR	Unusual Event (EI 1300.02)
	2.	Loss of all three 345 KV transmission lines	
Loss of offsite power and all onsite AC power for more than 15 minutes	1.	All AC buses deenergized more than 15 minutes	Site Emergency (EI 1300.04)
Loss of all onsite DC power	1.	All DC buses deen- ergized as determined by breaker positions, and line voltage or amperage meters	Alert (EI 1300.03)
Loss of all onsite DC power for more than 15 minutes	1.	All DC buses deenergized for more than 15 minutes	Site Emergency (EI 1300.04)

	31 EI	1300.01.3
	TABLE 1	
	FIRE	
Condition	Indication(s)	Emergency Classification
Uncontrolled fire <u>NOT</u> involving a safety system, but requiring offsite support	<ol> <li>Any fire at the Station that requires offsite support</li> </ol>	Unusual Event <sup>3</sup> (EI 1300.02)
Uncontrolled fire potentially affecting safety systems and requiring offsite	<ol> <li>Any fire at the Station that requires offsite support AND</li> </ol>	Alert (EI 1300.03)
support	<ol> <li>Has the potential to damage or degrade a safety system</li> </ol>	
Fire resulting in the loss of redundant safety system trains or functions	<ol> <li>Observation of a major fire that defeats the capability of redundant safety system trains which includes both trains or functions</li> </ol>	Site Emergency (EI 1300.04)

NOTE: For the above asterisked (\*) classification(s), the plant can be in any Mode for the listed EAL's to be applicable.

#### TABLE 1

### SECURITY THREAT

Condition		Indication(s)	Emergency Classification
Security Threat, Attempted Entry, or Attempted Sabotage	1.	Report by a senior member of the Security Force of an Attempted Entry, Attempted Sabotage, or a Security Threat	Unusual Event* (EI 1300.02)
Ongoing Security Compromise	1.	Report by a senior member of the Security Force that a Security Emergency is in progress	Alert* (EI 1300.03)
Imminent loss of physical control of the plant	1.	Physical attack on the plant involving imminent occupancy of the Control Room or local shutdown stations	Site Emergency* (EI 1300.04)
Loss of physical control of the facility	1.	Physical attack on the plant which has resulted in occupation of the Control Room or local shutdown stations by unauthorized personnel	General Emergency <sup>4</sup> (EI 1300.05)

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NOTE: For the above asterisked (\*) classification(s), the plant can be in any Mode for the listed EAL's to be applicable.

#### TABLE 1

### HAZARDS TO STATION OPERATIONS

Condition		Indication(s)	Emergency Classification
Aircraft crash onsite or unusual aircraft activity over facility	1.	Control Room informed by Station personnel who have made a visual siting	
Aircraft crash affect- ing plant structures	1.	Control Room informed by Station personnel who have made a visual siting	Alert (EI 1300.03)
Aircraft crash damaging vital plant systems	1.	Control Room informed by Station personnel who have made a visual siting AND	Site Emergenc (EI 1300.04)
	2.	Instrumentation readings on vital systems indicate equipment problems	
Train derailment onsite	1.	Control Room informed by Station personnel who have made a visual siting AND	Unusual Event (EI 1300.02)
	2.	Station Structures have been damaged OR	
	3.	Danger or potential danger to Station personnel exist	
Onsite explosion	Sta	trol Room informed by tion personnel who have le a visual siting	Unusual Event (EI 1300.02)
Onsite explosion affect- ing plant operations	1.	Control Room informed by Station personnel who have made a visual siting AND	Alert (EI 1300.03)
	2.	Instrumentation readings o plant systems indicate equipment problems	n

3 NOTE: For the above asterisked (\*) classification(s), the plant can be in any Mode for the listed EAL's to be applicable.

#### TABLE 1

### HAZARDS TO STATION OPERATIONS (Con't)

Condition	4	Indication(s) C	Emergency lassification
Explosion causing severe damage to hot shutdown equipment	1.	Explosion causing either of the following combina- tions of systems to become inoperable: A. Makeup System and HPI System OR B. Main Feedwater System and Auxiliary Feed water System	Site Emergenc (EI 1300.04)
Toxic or flammable gas release from its con- tainer to atmosphere at life threatening levels near or onsite	1.	Control Room informed by Station personnel who have discovered it	Unusual Event <sup>3</sup> (EI 1300.02)
Uncontrolled toxic or flammable gas release at life threatening levels within plant facilities	1.	Control Room informed by Station personnel who have made a visual siting OR Chlorination System Trouble Alarm initiates and Station personnel verify a signifi- cant release	
Uncontrolled toxic or flammable gas release at life threatening levels within plant vital areas	1. 2. 3.	Control Room informed by Station personnel who have made a visual siting AND Chlorination System Trouble Alarm initiates and Station personnel verify a signifi- cant release OR The Control Room Ventila- tion System automatically shuts down	

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NOTE: For the above asterisked(\*) classification(s), the plant can be in any Mode for the listed EAL's to be applicable.

# TABLE 1

# HAZARDS TO STATION OPEPATIONS (Con't)

Condition	Indication(s)	Emergency Classification Alert (EI 1300.03)	
Turbine damage causing casing penetration	Control Room informed by Station personnel who have made a visual inspection of turbine casing		
Missile impact on plant structures	Control Room informed by Station personnel of any missile	Alert (EI 1300.03)	
Missile impact causing severe damage to Hot Shutdown equipment	<ol> <li>Control Room informed by Station personnel of any missile impact on Hot Shut down equipment AND</li> </ol>	Site Emergency (EI 1300.04)	
	<ol> <li>Instrumentation readings on Hot Shutdown equipment indicate equipment problem</li> </ol>		

#### TABLE 1

Condition		Indication(s)	Emergency Classification	
Any earthquake	1.	Confirmed Station Seismic Instrumentation Alarm	Unusual Event (EI 1300.02)	
Earthquake > Operating Basis Earthquake (OBE) levels	1.	Procedure for Earthquake Evaluation (SP 1105.17) indicates earthquake >.08	Alert (EI 1300.03) 8	
Earthquake >Safe Shutdown Earthquake (SSE) levels	1.	Procedure for Earthquake Evaluation (SP 1105.17) indicates earthquake >.15 g	Site Emergenc (EI 1300.04)	
Any Tornado onsite	1.	Control Room informed by Station personnel who have made a visual siting of a Tornado crossing the site boundary	Unusual Event (EI 1300.02)	
Tornado striking facility	1.	Control Room informed by Station personnel who have made a visual siting	Alert (EI 1300.03)	
Hurricane	1.	Control Room informed by Load Dispatcher of Hurricane Watch for Ottawa County	Unusual Event (EI 1300.02)	
Hurricane force winds up to Design Basis Levels	1.	Control Room informed by Load Dispatcher of Hurricane striking Ottawa County AND Wind speed indication from the station meteorological tower is of sustained winds approaching 90 mph		

# NATURAL EVENTS (WITHIN OTTAWA COUNTY)

NOTE: For the above asterisked(\*) classification(s), the plant can be in any Mode for the listed EAL's to be applicable.

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## TABLE 1

## NATURAL EVENTS (WITHIN OTTAWA COUNTY) (Con't)

Condition		Indication(s)	Emergency Classification
Hurricane force winds > Design Basis Levels	1.	Control Room informed by Load Dispatcher of Hurricane striking Ottawa County AND	Site Emergency (EI 1300.04)
	2.		
50 year flood or low water, surge or seiche	1.	Control Room informed by Load Dispatcher OR	Unusual Event* (EI 1300.02)
	2.	Control Room informed by Station personnel who have made visual siting AND	
	3.	High Forebay level alarm or lake level indication oscillating with readings high (>580 feet I.G.L.D.) or low (<565 Feet I.G.L.D.	)
Flood, low water, surge or seiche at Design Levels	1.	Control Room informed by Load Dispatcher OR	Alert (EI 1300.03)
	2.	Control Room informed by Station personnel who have made visual siting AND	
	3.		

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NOTE: For the above asterisked(\*) classification(s), the plant can be in any Mode for the listed EAL's to be applicable.

## TABLE 1

	Indication(s)	Emergency Classification
	Control Room informed by Load Dispatcher OR	Site Emergency (EI 1300.04)
2.	Control Room informed by Station personnel who have made a visual siting AND	
3.	High Forebay level alarm or lake level indication oscillating with readings > Design Levels high (>584 feet I.G.L.D.) or low (<562.1 feet I.G.L.D.)	
	2.	<ol> <li>Control Room informed by Load Dispatcher OR</li> <li>Control Room informed by Station personnel who have made a visual siting AND</li> <li>High Forebay level alarm or lake level indication oscillating with readings &gt; Design Levels high (&gt;584 feet I.G.L.D.) or low</li> </ol>

# NATURAL EVENTS (WITHIN OTTAWA COUNTY) (Con't)

	T-6939 - File Copy, Master File
DAVIS-BESSE NUCLEAR POWER STATION - UNIT 1 TEMPORARY MODIFICATION REQUEST ED 6926	COPIES TO BE MODIFIED FOR IMMEDIATE IMPLEMENTATION E.C.C 2 Shift Supervisor - 2 Control Room - 2
SE	ECTION 1

DISTRIBUTION

PROCEDURE TITLE AND NUMBER	1				
	Unusual	Event	EI	1300.02	
REASON FOR CHANGE					

For added clarification of an EDO responsibility.

To ensure the prompt notification of Key Emergency Besponse Personnel and Agencies, if required.

CHANGE

Add a note to section 5.2.3 as follows:

5.2.3

· Com

NOTE: If the E.D.O. reports to the E.C.C., he should contact the Emergency Planning Supervisor (E.P.S.) by telephone, or request Control Room personnel to contact the E.P.S. via the Emergency Call System individual page.

IS PROCEDURE REVISION REQUIRED Yes X No If no, this modification is valid until		
PREPARED BY Ron Durdel	DATE 12/21/82	
APPROVED BY On- Lingth	DATE 12/22/22	
APPROVED BY Sala	DATE 12/23/82	
SUBMITTED BY (Section Head)	DATE 12/23/82	
RECOMMENDED BY (SRB Chairman)	DATE 12/27/82	
QA APEROVED BY (Manager of Quality Assurance)	DATE	
APPROVED BY (Station Superingendent)	DATE 2/27/82	

#### Davis-Besse Nuclear Power Station

#### Unit No. 1

#### Emergency Plan Implementing Procedure EI 1300.02

#### Unusual Event

#### Record of Approval and Changes

Prepared by	G. J. Reed	5/30/80
		Date
Submitted by	C. E. Wells	6/13/80
	Section Head	Date
Recommended by_	BRBer	6/13/80
	SRB Chairman	Date
QA Approved	NH	
	Quality Assurance Manager	Date
Approved by	TO minan	81,8/80
	Station Superintendent	Date

Revision SRB a SRB QA Sta. Supt. Recommendation Date Approved Date Approved Date No. TOMuney/6003 1 30/81 theyes 11x481 NA 1 as Andering 6/22/02 NIT Tomung 7/2 Andering 10/19/82 NIT TOmungflass 3 7/2/8 2 129/32 3

#### -1. PURPOSE

To outline the course of action and protective measures required to mitigate the consequences of a Station emergency at the Unusual Event level to safeguard Station personnel and the general public.

1

2. SCOPE

Describes the actions and responsibilities of Davis-Besse personnel and offsite support groups in the event the Shift Supervisor declares an Unusual Event in accordance with the Emergency Plan Activation procedure, EI 1300.01.

3. REFERENCES

3.1 Davis-Besse Nuclear Power Station Emergency Plan

- 3.2 Station Response to Emergencies, EI 1300.00
- 3.3 Emergency Plan Activation, EI 1300.01
- 3.4 First Aid Response, AD 1827.02
- 3.5 Protective Action Guidelines, AD 1827.12
- 4. DEFINITIONS

2

4.1 <u>Unusual Events</u> - Event(s) are in progress or which occurred that indicate a potential degradation of the level of safety of DBNPS.

#### 5. EMERGENCY MEASURES

5.1 Shift Supervisor

The Shift Supervisor, having assumed the role of interim Emergency Duty Officer and having classified the emergency as an Unusual Event, shall assure the following actions are taken as required (See Attachment 1):

- 5.1.1 Make the appropriate notifications or sound the appropriate alarm as necessary:
  - a. Fire
  - b. Containment Evacuation
  - c. Initiate Emergency Procedures

NOTE :

The station alarm need not be sounded if downgrading from a higher classification. NOTE :

- The announcement should include; 1) the Emergency Action Level classification, 2) the level of response required, and 3) a brief description of plant conditions.
- The Shift Supervisor or his designee shall then activate the pagers of the key emergency response personnel as listed in Administrative Memorandum No. 37.

3

- 4. When paged (beeped), those individuals must telephone the Edison Operator who shall connect them with the Telephone Pager thus allowing them to hear the recorded message.
- These individuals shall then "call in" or notify additional personnel as required to provide adequate response to the eventby using Administrative Memorandum No. 37.
  - NOTE: The NRC resident inspector can be telephoned or paged in accordance with AD 1827.17 if necessary.
- 5.1.4 Notification of the following agencies must occur:
  - NOTE: When notifying an outside agency, record the name of the individual contacted and request a return telephone call from the agency to verify notification.
  - a. Sheriff's Department, Ottawa County, as soon as possible after the declaration is made (normal time is approximately 15 minutes)
  - b. NRC Region III, Office of Inspection and Enforcement; NRC, NRR, Emergency Incident Response Center, Bethesda, Maryland (This is accomplished by the NRC Emergency Notification System - Red Phone) within one hour.
- 5.1.5 Continue in the capacity of interim Emergency Duty Officer until relieved by the assigned Emergency Duty Officer.

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- 5.2.6 Recommend protective actions to the Ottawa County Sheriff if required by assessment results per AD 1827.12, Protective Action Guidelines.
- 5.3 Shift Operations Personnel
  - 5.3.1 Control Room operators shall maintain safe operations of the Station and minimize the potential hazards to Station personnel and the general public as directed by the Shift Supervisor.
  - 5.3.2 In the event that the Shift Supervisor is incapacitated, his duties and responsibilities indicated in Step 5.1 shall be assumed by the Assistant Shift Supervisor in the Control Room until relieved by a qualified Shift Supervisor.
  - 5.3.3 Equipment and auxiliaries operators shall maintain safe operations of the Station as directed by the Shift Supervisor.
  - 5.3.4 The Shift Technical Advisor shall provide technical and analytical support in the diagnosis of off-normal events. He shall also advise and assist the Shift Supervisor on matters pertaining to the safe and proper operation of the plant with regards to nuclear safety.
- 5.4 Shift Chemistry and Radiation Tester (C&RT)
  - 5.4.1 The shift C&RT shall report immediately to the Health Physics Monitoring Room to await instruction from the Shift Supervisor or Chemist and Health Physicist.
  - 5.4.2 The shift C&RT shall provide radiological monitoring for the Fire Brigade in the event of a fire in RACA.
  - 5.4.3 The shift C&RT shall monitor all injured personnel before they leave the site. An off-shift C&RT shall accompany or meet the contaminated personnel at the offsite medical facilities.

#### 5.5 Fire Brigade

1

5.5.1 The Fire Brigade Captain shall respond to any announced fire, evaluate the situation, direct the Fire Brigade, and keep the Shift Supervisor informed of the status of the fire. 5.10.1 The Carroll Township Ambulance Service shall provide transportation service as required for offsite medical treatment.

7

- 5.10.2 The H.B. Magruder Memorial Hospital shall provide offsite medical treatment for personnel as required.
- 5.10.3 The Carroll Township Fire Department shall provide primary response to fire alarms onsite as required.
  - a. The Village of Oak Harbor Fire Department shall provide alternate response to fire alarms onsite as required through mutual aid with Carroll Township.
- 5.10.4 The Ottawa County Sheriff's Department is notified in order that local authorities may be prepared to answer inquiries generated by the public. The Sheriff's Department is also the main contact for medical and fire support agencies who respond to Davis-Besse (See Sections 5.10.1, 5.10.2 and 5.10.3 above).

#### 6. TERMINATION

- 6.1 The Emergency Duty Officer and Station Operations Manager have joint responsibility for determining and declaring when the emergency situation is stable.
- 6.2 The Emergency Duty Officer shall assure notification of all offsite organizations and TECo personnel that the emergency has terminated.
- 6.3 A written summary will follow notification of termination within 24 hours.

#### EDO/SHIFT SUPERVISOR CHECKLIST FOR UNUSUAL EVENT

#### ATTACHMENT 1

NOTE: If changing from a prior emergency classification checklist, complete steps NOT already accomplished by the previous checklist. Then attach all the previous checklists used to this one. Place N/A in steps that are not applicable.

CTION	REQUIRED	DATE TIME INITIALS
	Initiate as requi	corrective action
2.		appropriate announce- sound the appropriate
	NOTE :	This step may be omitted when downgrading from a higher classification.
3.	emergency and make	location, type of y on Gai-tronics twice the appropriate announce- to personnel assembly as
	Confirm (See EI	Emergency Classification
5.	Conduct	necessary notification:
	a.	Secondary Alarm Station
		NOTE: In the event of a Fire, or Medical Emergency the S.A.S. operator will make calls for emergency support and/or notification of the following agencies or personnel.
		<ol> <li>Fire Department(s)</li> <li>Emergency Medical Service (Ambulance)</li> <li>Life Flight Air Ambulance</li> <li>H.3. Magruder Hospital</li> <li>St. Charles Hospital</li> </ol>
		6. Edison Operator

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ACTION COMPLETED

EI 1300.02.3

EDO/SHIFT SUPERVISOR CHECKLIST FOR UNUSUAL EVENT

9

ATTACHMENT 1 (Con't)

		· ACTION COMPLETED
ACTION	REQUIRED	DATE TIME INITIALS
	b.	Nuclear Security Super- visor (Ext. 556 or 557)
	c.	Edison Centrex Operator
	d.	Station Management (See Step 5.1.3(b) of this procedure)
		1. Station Superin- tendent
		NOTE: The Station Superintendent or his designee is responsible for notifying the Ottawa County Sheriff upon declaration of an Emergency Action Level.
		2. The Key Emergency Response Personnel:
		Emergency Duty Officer, Assistant Station Superin- tende: t Operations, Chemist and Health Physicist, Nuclear Services Director, Emergency Planning Super- visor, Nuclear Security Manager, News Media Relations

\*NRC (use the Emergency Notification System - Red Phone)

and Operations Engineer.

\*NOTE: NRC notification must be made within one hour and should be made by station management. Health physics information should be transmitted using the NRC Health Physics Network by the Chemist and Health Physicist or his designee. (Dial 22 for NRC Headquarters - 23 for NRC Region 3 Office.)

Supervisor, Technical Engineer, Maintenance Engineer,

6. Conduct Periodic Updates for:

e.

10 EI 1300.02.3

EDO/SHIFT SUPERVISOR CHECKLIST FOR UNUSUAL EVENT

ATTACHMENT 1 (Con't)

			AC	ACTION COMPLETED			
ACTION	REQUIRED		DATE	TIME	INITIALS		
	а.	TED Personnel					
	b.	NRC					
	с.	Ottawa County Sheriff					
7.	EI 1300.	tions change, check 01 to determine ssification is ate					
8.	When the notify:	condition is resolved					
	a.	TED Personnel					
	Ъ.	NRC					
	с.	Ottawa County Sheriff					

Reviewed	bv			Filed	by		
		Station	Superintendent			Emergency	
						Superv	/isor

# Davis-Besse Nuclear Power Station

Unit No. 1

# Emergency Plan Implementing Procedure EI 1300.03

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11

# Alert

# Record of Approval and Changes

Prepared by	G. J. Reed	5/30/8%
	A SHOLL AND A SHOLL AND	Date
Submitted by	C. E. Wells	6/13/80
	Section Head	Date
Recommended by	BEBer	6/13/80
	SRB Chairman	Date
QA Approved	NA	
	Quality Assurance Manager	Date
Approved by	Domand	8/18/80
	Station Superintendert	Date

Revision	SRB		QA		Sta. Supt	
No.	Recommendation	Date	Approved	Date	Approved	Daçe
1	Bollow "	14/81	NA	T	Domunay	Date 1005 30/81
2	Andrenny	6/22/8	= NA	1	oming	6/28/92
3	Andeny	and the second				3 11/3/82

#### 1. PURPOSE

To outline the course of action and protective measures required to mitigate the consequences of Station emergency at the Alert level to safeguard Station personnel and the general public.

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2. SCOPE

Describes the actions and responsibilities of Davis-Besse personnel and offsite support groups in the event the Shift Supervisor declares an Alert as identified in the Emergency Plan Activation procedure, EI 1300.01.

- 3. REFERENCES
  - 3.1 Davis-Besse Nuclear Power Station Emergency Plan
  - 3.2 Station Response to Emergencies, EI 1300.00
  - 3.3 Emergency Plan Activation, EI 1300.01
  - 3.4 Protective Action Guidelines, AD 1827.12
- 4. DEFINITIONS
  - 4.1 <u>Alert</u> Events are in progress or have occurred which involve an actual or substantial degradation of the level of safety of DENPS.

#### 5. EMERGENCY MEASURES

5.1 Shift Supervisor

The Shift Supervisor, having assumed the role of interim Emergency Duty Officer and having classified the emergency as an Alert, shall assure the following actions are taken as required (See Attachment 1):

- 5.1.1 Make the appropriate notifications or sound the appropriate alarm as necessary:
  - a. Tire
  - b. Containment Evacuation
  - c. Initiate Emergency Procedures

NOTE :

The station alarm need not be sounded if downgrading from a higher classification. 2

5.1.2 Announce the location, type and classification of the emergency on the Station public address system twice and make the appropriate announcement as to the need for personnel assembly, non-assembly, evacuation, or non-evacuation as the conditions dictate.

2

5.1.3 Notify the following individuals:

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a. Nuclear Security Supervisor

b. Station Superintendent

 During normal working hours, the Station Superintendent should be reached over the Station gai-tronics or telephone or by utilizing his "beeper" pager. During off normal working hours, manually telephone his office and home using the numbers listed in Administrative Memorandum No. 37. If there is no answer, then attempt a page. Upon being notified, the Station Superintendent shall then confer with the Shift Supervisor and ascertain the degree of response that may be necessitated by a plant event.

NOTE: If the Station Superintendent does NOT respond within five minutes, re-initiate the page. If he fails to respond to a second page, the Assistant Station Superintendent, Operations, should be contacted. If neither can be contacted, the Shift Supervisor should exercise his own judgement in dealing with the situation.

2. The Station Superintendent can then authorize the Shift Supervisor to tape an announcement on the Telephone Pager located in the Shift Supervisor's office. (The Station Superintendent may elect to perform this evolution himself over the telephone. If so, the Station Superintendent should call the Edison Operator and request to be connected to the Telephone Pager.) NOTE :

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- The announcement should include; 1) the Emergency Action Level classification, 2) the level of response required, and 3) a brief description of plant conditions.
- The Shift Supervisor or his designee shall then activate the pagers of the key emergency response personnel as listed in Administrative Memorandum No. 37.
- 4. When paged (beeped), those individuals must telephone the Edison Operator who shall connect them with the Telephone Pager thus allowing them to hear the recorded message.
- Those individuals shall then "call in" or notify additional personnel as required to provide adequate response to the event by using Administrative Memorandum No. 37.
  - NOTE: The NRC resident inspector can be telephoned or paged in accordance with AD 1827.17 if necessary.
- 5.1.4 Notification of the following agencies must occur:
  - NOTE: When notifying an outside agency, record the name of the individual contacted and request a return telephone call from the agency to verify notification
  - a. Sheriff's Department, Ottawa County, as soon as possible after the declaration is made (normal notification time is approximately 15 minutes)
  - b. NRC Region III, Office of Inspection and Enforcement; NRC, NRR, Emergency Incident Response Center, Bethesda, Maryland (This is accomplished by the NRC Emergency Notification System - Red Phone) within one hour.
- 5.1.5 Continue in the capacity of interim Emergency Duty Officer until relieved by the assigned Emergency Duty Officer.

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5.1.6

## Assessment actions which shall include:

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- a. Increased surveillance of in-plant instrumentation.
- b. The dispatching of shift personnel to the identified problem area for confirmation and visual assessment of the problem.
- c. The dispatching of onsite RMT's to monitor for possible releases and to provide confirmation of correct accident classification.
- d. Surveillance (if a radiological accident is occurring) of the in-plant instrumentation necessary to obtain meteorological and radiological data required for calculating or estimating projected doses. This dose assessment activity shall continue until termination of the emergency in order that the updating of initial assessments may be provided to all concerned offsite agencies and to the EDO.
- Corrective actions by plant operators shall be 5.1.7 according to established procedures that place the plant in a safe condition.
- 5.2 Emergency Duty Officer (EDO)

The Emergency Duty Officer, upon being informed that an Alert has been declared, shall:

- 5.2.1 Report to the Emergency Control Center and assume the position of Emergency Duty Officer in the onsite emergency organization, relieving the Shift Supervisor of this duty.
- 5.2.2 Evaluate the information, data, and methods utilized by the Shift Supervisor in making his determination in order to ensure that the proper emergency classification has been made.
- 5.2.3 Determine to what extent the offsite and onsite emergency organizations shall be activated.
  - a For an Alert, the emergency teams shall be activated along with all or portions of the onsite emergency organization.

5.2.4 If the onsite organization is required and the need exists, activate the ECC according to the Emergency Control Center Activation Procedure, EI 1300.08.

5

- 5.2.5 Continue assessment actions initiated by the Shift Supervisor.
- 5.2.6 Recommend protective actions to the Ottawa County Sheriff as required by assessment results per AD 1827.12, Protective Action Guidelines.
- 5.3 Shift Operations Personnel
  - 5.3.1 Control Room operators shall maintain safe operations of the Station and minimize the potential hazards to Station personnel and the general public as directed by the Shift Supervisor.
  - 5.3.2 In the event that the Shift Supervisor is incapacitated, his duties and responsibilities indicated in Step 5.1 shall be assumed by the Assistant Shift Supervisor in the Control Room until relieved by a qualified Shift Supervisor.
  - 5.3.3 Equipment and auxiliaries operators shall maintain safe operations of the plant as directed by the Shift Supervisor.
  - 5.3.4 The Shift Technical Advisor shall provide technical and analytical support in the diagnosis of off-normal events. He shall also advise and assist the Shift Supervisor on matters pertaining to the safe and proper operation of the plant with regards to nuclear safety.
- 5.4 Shift Chemistry and Radiation Tester (C&RT)

- 5.4.1 The shift C&RT shall report immediately to the Health Physics Monitoring Room to await instructions from the Shift Supervisor or Chemist and Health Physicist.
- 5.4.2 The shift C&RT shall provide radiological monitoring for the Fire Brigade in the event of a fire in RACA.
- 5.4.3 The shift C&RT shall monitor all injured personnel before they leave the site. An off-shift C&RT shall accompany or meet the contaminated personnel at the offsite medical facilities.

- 5.5 Fire Brigade
  - 5.5.1 The Fire Brigade Captain shall respond to any announced fire, evaluate the situation, direct the Fire Brigade, and keep the Shift Supervisor informed of the status of the fire.
  - 5.5.2 Personnel assigned to the Fire Brigade shall respond to any announced fire with appropriate fire fighting and protective equipment and extinguish the fire as directed by the Fire Brigade Captain.
  - 5.5.3 The first Fire Brigade Captain arriving on the scene should remain in charge of the fire until termination of the emergency or relieved by the Fire Chief or Assistant Fire Chief.
- 5.6 First Aid Team
  - 5.6.1 The First Aid Team Leader shall respond to any announced personnel injuries, evaluate the situation, direct the First Aid Team and keep the Shift Supervisor informed of the status of the injured individual(s).
  - 5.6.2 Personnel assigned to the First Aid Team shall respond to any announced personnel injury with appropriate first aid supplies and provide the necessary first aid treatment.
- 5.7 Nuclear Security Force
  - 5.7.1 The Nuclear Security Supervisor, upon notification by the Shift Supervisor that an Alert exists, shall implement the Industrial Security Plan Procedure, AD 1808.00.
  - 5.7.2 Nuclear Security Officers shall maintain security of the Station as directed by the Nuclear Security Supervisor.
- 5.8 Radiation Monitoring Team (RMT)

- 5.8.1 All qualified non-chemistry and health physics RMT members will report to the turbine deck assembly area adjacent to the OSC.
- 5.8.2 The OSC Manager will designate RMT members as to their assignment as offsite or onsite.

- a. A list of qualified RMT's is found in Administrative Memo 42.
- b. Only one member of each team should be from the C&HP section.
- 5.8.3 If requested by the EDO, offsite RMT's will be dispatched to the Radiological Testing Laboratory (RTL) for further instructions.

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- 5.8.4 RMT's responding from offsite will report to the RTL for further assignment.
- 5.9 Onsite Personnel

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- 5.9.1 Personnel, who do <u>NOT</u> have specifically assigned duties shall proceed to areas as prescribed in AD 1827.11 Assembly, Accountability, and Subsequent Evacuation.
- 5.10 Offsite Personnel
  - 5.10.1 Station personnel whose emergency response is at the station and who are normally authorized non-escorted access, will be admitted upon verbal communications with security.
  - 5.10.2 Support group personnel requested to respond to the site will report to the Security Station at the north end of the Davis-Besse Administration Building for subsequent assignment.
    - a. Personnel directed to the station, but who are normally granted escorted access, will be admitted unescorted upon written authorization from the Station Operations Manager.
    - b. Personnel directed to the station, but who are normally granted escorted access, will be admitted with an escort upon verbal authorization from the Shift Supervisor or EDO.
- 5.11 Offsite Agencies and Organizations
  - 5.11.1 The Carroll Township Ambulance Service shall provide transportation service as required for offsite medical treatment.
  - 5.11.2 The H. B. Magruder Memorial Hospital shall provide offsite medical treatment for personnel as required.

- 5.11.3 The Carroll Township Fire Department shall provide primary response to fire alarms onsite as required.
  - a. The Village of Oak Harbor Fire Department shall provide alternate response to fire alarms ensite as required through mutual aid with Carroll Township.
- 5.11.4 The Ottawa County Sheriff's Department is experienced in providing area control, communications assistance, and direct handling of the local population, including evacuation, should it become necessary. The Sheriff's Department provides 24 hour radio communication coverage with the Shift Supervisor at DBNPS and is the lead offsite governmental agency contacted in the event of an emergency at the site.

#### 6. TERMINATION

- 6.1 The Emergency Duty Officer and Station Operations Manager have joint responsibility for determining and declaring when the emergency situation is stable.
- 6.2 The Emergency Duty Officer shall assure notification of all offsite organizations and TECo personnel that the emergency has terminated.
- 6.3 A written summary will follow notification of termination within 8 hours.

9 EI 1300.03.3

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## EDO/SHIFT SUPERVISOR CHECKLIST FOR ALERT

## ATTACHMENT 1

NOTE: If changing from a prior emergency classification checklist, complete steps <u>NOT</u> already accomplished by the previous checklist. Then attach all the previous checklists used to this one. Place N/A in steps that are not applicable.

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ACTION	REQUIRED			DATE AC	TION COMP	LETED INITIALS
1.	Initiate as requir		ve action			
2.			ate announce appropriate			
	NOTE :	This step classifi		tted when down	grading f	rom a higher
3.	emergency and make	the approximation of the	, type of tronics twic opriate anno nel assembly	unce-		
4.	Confirm H (See EI 1		Classificat	ion		
5.	Conduct :	necessary	notificatio	n:		
	a.		y Alarm Stat (Ext. 280 or			
		NOTE :	operator wi	ll make calls	for emerg	Emergency the S.A.S sency support and/or acies or personnel.
		2. Eme Ser 3. Lif Anb 4. H.B Hos 5. St. Hos	e Department rgency Medic vice (Ambula e Flight Air ulance . Magruder pital Charles pital son Operator	al		

10 EI 1300.03.3

EDO/SHIFT SUPERVISOR CHECKLIST FOR ALERT (Con't)

## ATTACHMENT 1

ACTION	REQUIRED	DATE <u>ACTION COMPLETED</u> DATE <u>TIME</u> <u>INITIALS</u>
	Ъ.	Nuclear Security Super
	c.	Edison Centrex Operator (Ext. 88-000 or 259-5000)
	d.	Station Management (See Step 5.1.3(b) of this procedure)
		1. Station Superin- tendent
		NOTE: The Station Superintendent or his designee is responsible for notifying the Ottawa County Sheriff upon declaration of an Emergency Action Level.
		2. The Key Emergency Response Personnel:
		Emergency Duty Officer, Assistant Station Superin- tendent Operations, Chemist and Health Physicist, Nuclear Services Director, Emergency Planning Super- visor, Nuclear Security Manager, News Media Relations Supervisor, Technical Engineer, Maintenance Engineer, and Operations Engineer.
	e.	<pre>*NRC (use the Emergency Notification System - Red Phone)</pre>
		*NOTE: NRC notification must be made within one hour and should be made by station management. Health physics information should be transmitted using the NRC Health Physics Network by the Chemist and Health Physicist or his designed. (Dial 22 for

Health Physicist or his designee. (Dial 22 for NRC Meadquarters - 23 for NRC Region 3 Office.)

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EDO/SHIFT SUPERVISOR CHECKLIST FOR ALERT (Con't)

# ATTACHMENT 1

ACTION	REQUIRED		DATE	TIME	INITIALS
6.	the ECC of EI 130	applicable steps of checklist (Attachment 3 00.08, Emergency Control ctivation)			
7.	Center Ad	tivation			
	а.	Emergency Control Center (EI 1300.08)			
	b.	Operations Support Center (EI 1300.06)			
	с.	Technical Support Center (EI 1300.07)			
8.	Conduct 1	Periodic Updates for:			
	а.	TED Personnel			
	ь.	NRC			
	с.	Ottawa County Sheriff			
9.	EI 1300.0	tions change, check D1 to determine ssification is appro-			
10.	When the notify:	condition is resolved			
	a.	TED Personnel			
	b.	NRC			
	с.	Ottawa County Sheriff			

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Station Superintendent

Filed by \_\_\_\_\_\_ Emergency Planning Supervisor-

#### Davis-Besse Nuclear Power Station

# Unit No. 1

Emergency Plan Implementing Procedure EI 1300.04

Site Emergency

Record of Approval and Changes

Prepared by	G. J. Reed	5/30/80
		Date
Submitted by	C. E. Wells	6/13/80
	Section Head	Date
Recommended by_	Billeur	6/13/8
	SRB Chairman	Date
QA Approved	NIA	
	Quality Assurance Manager	Date
Approved by	Tommay	8/10/80
	Station Superintendent	Date

No. Recommendation Date Approved Date Approved Date Approved Date Approved Date Approved Date 1 Ballogue 1/14/81 N/A TOMuney, 2005/91 2 Amarg 6/22/82 N/A TOMUNG 7/2/ 3 Amarg 10/13/82 N/A TOMUNG 11/3/ Revision 7/2/82 11/3/82

### 1. PURPOSE

To outline the course of action and protective measures required to mitigate the consequences of a Station emergency at the Site Emergency level to safeguard Station personnel and the general public.

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2. SCOPE

Describes the actions and responsibilities of Davis-Besse personnel and offsite support groups in the event the Shift Supervisor declares a Site Emergency in accordance with the Emergency Plan Activation procedure, EI 1300.01.

#### REFERENCES

3.1 Davis-Besse Nuclear Power Station Emergency Plan

- 3.2 Station Response to Emergencies, EI 1300.00
- 3.3 Emergency Plan Activation, EI 1300.01
- 3.4 Protective Action Guidelines, AD 1827.12

## 4. DEFINITIONS

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4.1 <u>Site Emergency</u> - Events are in progress or have occurred which involve actual or likely major failures of DBNPS functions needed for the protection of the public. There also exists a significant actual or potential release of radioactive material.

#### 5. EMERGENCY MEASURES

5.1 Shift Supervisor

The Shift Supervisor, having assumed the role of interim Emergency Duty Officer and having classified the emergency as a Site Emergency, shall assure the following actions are taken as required (See Attachment 1):

- 5.1.1 Sound the appropriate alarm:
  - a. Fire
  - b. Containment Evacuation
  - c. Initiate Emergency Procedures

NOTE :

The station alarm need not be sounded when downgrading from a higher classification. 5.1.2 Announce the location, type and classification of the emergency on the Station public address system twice and make the appropriate announcement as to the need for personnel assembly, non-assembly, evacuation, or non-evacuation as the conditions dictate.

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- 5.1.3 Notify the following individuals immediately:
  - a. Nuclear Security Supervisor
  - b. Station Superintendent

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 During normal working hours the Station Superintendent should be reached over the Station gai-tronics or by utilizing his "beeper" pager. During off normal working hours, manually telephone his office and home using the numbers listed in Administrative Memorandum No. 37. If there is no answer, then attempt a page. Upon being notified, the Station Superintendent shall then confer with the Shift Supervisor and ascertain the degree of response that may be necessitated by the plant event.

NOTE: If the Station Superintendent does NOT respond within five minutes, re-initiate the page. If a second page fails, contact the Assistant Station Superintendent, Operations. If neither can be contacted, the Shift Supervisor should exercise his own judgment in dealing with the situation.

2. The Station Superintendent can then authorize the Shift Supervisor to tape an announcement on the Telephone Pager located in the Shift Supervisor's office. (The Station Superintendent may elect to perform this evolution himself over the telephone. If so, the Station Superintendent should call the Edison Operator and request to be connected to the Telephone Pager.)

EI 1300.04.2

NOTE :

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- 2: The announcement should include; 1) the Emergency Action Level classification, 2) the level of response required, and 3) a brief description of plant conditions.
- The Shift Supervisor or his designee shall then activate the pagers of the key emergency response individuals as listed in Administrative Memorandum No. 37.
- 4. When paged (beeped), those individuals must telephone the Edison Operator who shall connect them with the Telephone Pager thus allowing them to hear the recorded message.
  - NOTE: The NRC resident inspector can be telephoned or paged in accordance with AD 1827.17 if necessary.
- Those individuals shall then "call in" or notify additional personnel as required to provide adequate response to the event by using Administrative Memorandum No. 37.
- 5.1.4 Notification of the following agencies must occur:
  - NOTE: When notifying an outside agency, record the name of the individual contacted and request a return telephone call from the agency to verify notification.
  - a. Sheriff's Department, Ottawa County, as soon as possible after the declaration is made (normal time is approximately 15 minutes)
  - b. NRC Region III, Office of Inspection and Enforcement; NRC, NRR, Emergency Incident Response Center, Bethesda, Maryland (This is accomplished by the NRC Emergency Notification System - Red Phone) within one hour.
- 5.1.5
  - 5 Continue in the capacity of interim Emergency Duty Officer until relieved by the assigned Emergency Duty Officer.

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EI 1300.04.0

#### 5.1.6 Perform assessment actions which shall include:

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- a. An increased amount of plant instrumentation shall be monitored, in particular, indications of core status (e.g., incore thermocouple readings, etc.) shall be monitored.
- b. Monitoring efforts shall be greatly increased. Onsite and offsite monitoring teams shall be dispatched. In addition to beta-gamma field measurements, the change-out of thermoluminescent dosimeters (TLD's) at frequent intervals may be performed; air sampling and collection of other environmental media for assessment of material transport and deposition shall be performed.
- c. Dose assessment activities shall be conducted more frequently, with an increased emphasis on dose projection for use as a factor in determining the necessity for protective actions. Radiological and meteorological instrumentation readings shall be used to project the dose rate as predetermined distances from the Station, and to determine the integrated dose received. In reporting the dose projections to the EDO or to offsite agencies, the dose rate, dose, and the basis for the time used for the dose estimate shall always be provided. Any confirmation of dose rates by offsite RMT's shall be reflected in reporting and/or revising dose estimate information provided to applicable offsite agencies.
- 5.1.7 Corrective actions by plant operators shall be according to established procedures that place the plant in a safe condition.
- 5.2 Emergency Duty Officer (EDO)

The Emergency Duty Officer, upon being informed that a Site Emergency has been declared, shall;

5.2.1 Report to the Emergency Control Center and assume the position of Emergency Duty Officer in the onsite emergency organization, relieving the Shift Supervisor of this duty.

- 5.2.2 Evaluate the information, data, and methods utilized by the Shift Supervisor in making his determination in order to ensure that the proper emergency classification has been made.
- 5.2.3 Determine to what extent the offsite and onsite , emergency organizations shall be activated.
  - a. For a Site Emergency, the emergency teams and the entire onsite emergency organization shall be activated. A major portion, if <u>NOT</u> all, of the offsite emergency organization may be activated.
- 5.2.4 Activate the ECC according to the Emergency Control Center Activation Procedure, EI 1300.08.
- 5.2.5 Continue assessment actions initiated by the Shift Supervisor.
- 5.2.6 Recommend protective actions to the Ottawa County Sheriff as required by assessment results per AD 1827.12, Protective Action Guidelines.
- 5.2.7 Ensure that continuous online phone communications are maintained with the State and County Emergency Operations Centers.
- 5.3 Shift Operations Personnel
  - 5.3.1 Control room operators shall maintain safe operations of the Station and minimize the potential hazards to Station personnel and the general public as directed by the Shift Supervisor.
  - 5.3.2 In the event that the Shift Supervisor is incapacitated, his duties and responsibilities. indicated in Step 5.1 shall be assumed by the Assistant Shift Supervisor in the Control Room until relieved by a qualified Shift Supervisor.
  - 5.3.3 Equipment and auxiliaries operators shall maintain safe operations of the plant as directed by the Shift Supervisor.
  - 5.3.4 The Shift Technical Advisor shall provide technical and analytical support in the diagnosis of off-normal events. He shall also advise and assist the Shift Supervisor on matters pertaining to the safe and proper operation of the plant with regards to nuclear safety.

- 5.4 Shift Chemistry and Radiation Tester (C&RT)
  - 5.4.1 The shift C&RT shall report immediately to the Health Physics Monitoring Room to await instructions from the Shift Supervisor or Chemist and Health Physicist.

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- 5.4.2 The shift C&RT shall provide radiological monitoring for the Fire Brigade in the event of a fire in RACA.
- 5.4.3 The shift C&RT shall monitor all injured personnel before they leave the site. An off-shift C&RT shall accompany or meet the contaminated personnel at the offsite medical facilities.
- 5.5 Fire Brigade
  - 5.5.1 The Fire Brigade Captain shall respond to any announced fire, evaluate the situation, direct the Fire Brigade, and keep the Shift Supervisor informed of the status of the fire.
  - 5.5.2 Personnel assigned to the Fire Brigade shall respond to any announced fire with appropriate fire fighting and protective equipment and extinguish the fire as directed by the Fire Brigade Captain.
  - 5.5.3 The first Fire Brigade Captain arriving on the scene should remain in charge of the fire until termination of the emergency or relieved by the Fire Chief or Assistant Fire Chief.
- 5.6 First Aid Team
  - 5.6.1 The First Aid Team Leader shall respond to any announced personnel injuries, evaluate the situation, direct the First Aid Team and keep the Shift Supervisor informed of the status of the injured individual(s).
  - 5.6.2 Personnel assigned to the First Aid Team shall respond to any announced personnel injury with appropriate first aid supplies and provide the necessary first aid treatment.
- 5.7 Nuclear Security Force

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5.7.1 The Nuclear Security Supervisor, upon notification by the Shift Supervisor that a Site Emergency exists, shall implement the Industrial Security Plan Procedure, AD 1808.00.

5.7.2 Nuclear Security Officers shall maintain security of the Station as directed by the Nuclear Security Supervisor.

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- 5.8 Radiation Monitoring Team (RMT)
  - 5.8.1 All qualified non-chemistry and health physics RMT members will report to the turbine deck assembly area adjacent to the OSC.
  - 5.8.2 The OSC Manager will designate RMT members as to their assignment as offsite or onsite.
    - a. A list of qualified RMT's is found in Administrative Memo 42.
    - b. Only one member of each team should be from the C&HP section.
  - 5.8.3 If requested by the EDO, offsite RMT's will be dispatched to the Radiological Testing Laboratory (RTL) for further instructions.
  - 5.8.4 RMT's responding from offsite will report to the RTL for further assignment.

## 5.9 Plant Staff

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Members of the plant staff that have been informed of a Site Emergency shall proceed to their designated locations and perform their assigned functions.

- 5.9.1 The Plant Operations Manager shall proceed to the Control Room. He shall direct plant operations and plant damage control efforts. He shall also keep the Station Operations Manager advised of plant operations.
- 5.9.2 The Operations Engineer shall proceed to the Control Room. His functions are to supervise control room activities, to perform onthe-spot operational analysis as required to assist the Shift Supervisor, and keep the Plant Operations Manager informed of current plant conditions.
- 5.10 Onsite Personnel

#### EI 1300.04.3

5.10.1 Personnel, who do <u>NOT</u> have specifically assigned duties shall proceed to assembly areas as prescribed in AD 1827.11 Assembly, Accountability, and Subsequent Evacuation.

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- 5.11 Offsite Personnel
  - 5.11.1 Station personnel whose emergency response is at the station and who are normally authorized non-escorted access, will be admitted upon verbal communications with security.
  - 5.11.2 Support group personnel requested to respond to the site will report to the Security Station located at the north end of the Davis-Besse Administration Building for subsequent assignment.
    - a. Personnel directed to the station, but who are normally granted escorted access, will be admitted unescorted upon written authorization from the Station Operations Manager.
    - b. Personnel directed to the station, but who are normally granted escorted access, will be admitted with an escort upon verbal authorization from the Shift Supervisor or EDO.
- 5.12 Offsite Agencies and Organizations
  - 5.12.1 The Carroll Township Ambulance Service shall provide transportation service as required for offsite medical treatment.
  - 5.12.2 The H. B. Magruder Memorial Hospital shall provide offsite medical treatment for personnel as required.
  - 5.12.3 The Carroll Township Fire Department shall provide primary response to fire alarms onsite as required.
    - a. The Village of Oak Harbor Fire Department shall provide alternate response to fire alarms onsite as required through mutual aid with Carroll Township.
  - 5.12.4 The Ottawa County Sheriff's Department is experienced in providing area control, communications assistance, and direct handling of the local population, including evacuation,

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#### EI 1300.04.2

should it become necessary. The Sheriff's Department provides 24 hour radio communication coverage with the Shift Supervisor at DBNPS and is the lead offsite governmental agency contacted in the event of an emergency at the site.

#### 6. TERMINATION

6.1 The Emergency Duty Officer and Station Operations Manager have joint responsibility for determining and declaring when the emergency situation is stable.

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- 6.2 The Emergency Duty Officer shall assure notification of all offsite organizations and TECo personnel that the emergency has terminated.
- 6.3 A written, summary will follow notification of termination within 8 hours.

EDO/SHIFT SUPERVISOR CHECKLIST FOR SITE EMERGENCY

#### ATTACHMENT 1

NOTE: If changing from a prior emergency classification checklist, complete steps <u>NOT</u> already accomplished by the previous checklist. Then attach all the previous checklists used to this one. Place N/A in steps that are not applicable.

ACTION	REQUIRED	DATE	TIME INITIALS
1.	Sound the	e appropriate alarm	
2.		location, type of y on Gai-tronics twice	
	NOTE :	These steps may be omitted when classification.	downgrading from a higher
3.	Initiate as requi	corrective action	
4.		Emergency Classification	
5.	Conduct	necessary notification:	
	a.	Secondary Alarm Station (S.A.S.)(Ext. 280 or 301)	
		operator will make call	or Medical Emergency the S.A.S. s for emergency support and/or lowing agencies or personnel.
		<ol> <li>Fire Department(s)</li> <li>Emergency Medical</li> <li>Service (Ambulance)</li> <li>Life Flight Air</li> <li>Ambulance</li> <li>H.B. Magruder</li> <li>Hospital</li> <li>St. Charles</li> <li>Hospital</li> <li>Edison Operator</li> </ol>	
	Ъ.	Nuclear Security Super- visor (Ext. 556 or 557)	

11 EI 1300.04.3

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EDO/SHIFT SUPERVISOR CHECKLIST FOR SITE EMERGENCY

ATTACHMENT 1 (Con't)

ACTION COMPLETED DATE TIME INITIALS

ACTION REQUIRED

c.

d.

е.

Edison Centrex Operator (Ext. 88-000 or 259-5000)

- Station Management (See Step 5.1.3(b) of this procedure)
  - Station Superintendent
    - NOTE: The Station Superintendent or his designee is responsible for notifying the Ottawa County Sheriff upon declaration of an Emergency Action Level.

 The Key Emergency Response Personnel:

> Emergency Duty Officer, Assistant Station Superintendent Operations, Chemist and Health Physicist, Nuclear Services Director, Emergency Planning Supervisor, Nuclear Security Manager, News Media Relations Supervisor, Technical Engineer, Maintenance Engineer, and Operations Engineer.

- \*NRC (use the Emergency Notification System - Red Phone)
- \*NOTE: NRC notification must be made within one hour and should be made by station management. During an incident or abnormal occurrence, health physics information should be transmitted using the NRC Health Physics Network by the Chemist and Health Physicist or his designee. (Dial 22 for NRC Headquarters - 23 for NRC Region 3 Office.)
- Perform applicable steps of the ECC checklist (Attachment 3 of EI 1300.08, Emergency Control Center Activation)

12 EI 1300.04.2

EDO/SHIFT SUPERVISOR CHECKLIST FOR SITE EMERGENCY

ATTACHMENT 1 (Con't)

ACTION	REQUIRED		DATE	ACTIC	N COMPI	LETED INITIALS
/7.	Center A	ctivation Confirmation				
	a.	Emergency Control Center (EI 1300.03)		1-		-
	ь.	Operations Support Center (EI 1300.06)	and the second s			
	c.	Technical Support Center (EI 1300.07)			<u></u>	
	ć.	Emergency Support Center (EI 1300.09)	4			- <u></u> -
8.	Conduct	Periodic Updates for:				
1. 4	a. 27	TED Personnel	-lei			
	b//					
	rey it	Ottawa County Sheriff				
9. /	EI 1300.	tions change, check Ol to determine selfication is appro-	315			
10.	When the notify	condition is resolved				
	a.	ED Personnel				
	Ъ.	NRC		21		
	c.	Ottawa County Sheriff		4,-		
				21		
	Story V					
Review			Filed	And in case of the local division of the	1	
	S	tation Superintendent				cy Planning ervisor

END

# Davis-Besse Nuclear Power Station

# Unit No. 1

Emergency Plan Implementing Procedure EI 1300.05

General Emergency

# Record of Approval and Changes

Prepared by	G. J. Reed	5/30/80
		Date
Submitted by	C. E. Wells	6/13/80
	Section Head	Date
Recommended by_	Billsun	6/13/80
	SRB Chairman	Date
QA Approved	NIA	
	Quality Assurance Manager	Date
Approved by	tomma	81.0/80
	Station Superintendent	Date

Revision	SRB		QA	Sta. Supt.	
No.	Recommendation	Date	Approved	Date Approved I	ate
1	BABBy	1/14/81	NA	+ Ommenties	130/91
2	Amany	G/22/8	- NA	Tomunay	
2	Amorany			Tomur	
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#### 1. PURPOSE

To outline the course of action and protective measures required to mitigate the consequences of a station emergency at the General Emergency level to safeguard Station personnel and the general public.

1

2. SCOPE

Describes the actions and responsibilities of Davis-Besse personnel and offsite support groups in the event of the Shift Supervisor declares a General Emergency in accordance with the Emergency Plan Activation procedure, EI 1300.01.

#### 3. REFERENCES

- 3.1 Davis-Besse Nuclear Power Station Emergency Plan
- 3.2 Station Response to Emergencies, EI 1300.00
- 3.3 Emergency Plan Activation, EI 1300.01
- 3.4 Emergency Offsite Dose Estimates, AD 1827.10
- 3.5 Protective Action Guidelines, AD 1827.12
- 4. DEFINITIONS
  - 4.1 <u>General Emergency</u> Events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with the potential for loss of containment integrity, and/or involve the potential release of radioactive particulates or gases offsite of a magnitude to exceed regulatory limits.

#### 5. EMERGENCY MEASURES

5.1 Shift Supervisor

The Shift Supervisor, having assumed the role of interim Emergency Duty Officer and having classified the emergency as a General Emergency, shall assure the following actions are taken as required (See Attachment 1):

- 5.1.1 Make the appropriate notifications or sound the appropriate alarm as necessary:
  - a. Fire
  - b. Containment Evacuation
  - c. Initiate Emergency Procedures

NOTE :

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The station alarm need not be sounded if downgrading from a high classification.

5.1.2 Announce the location, type and classification of the emergency on the Station public address system twice and make the appropriate announcement as to the need for personnel assembly, non-assembly, evacuation, or non-evacuation as the conditions dictate.

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#### 5.1.3 Notify the following individuals:

- a. Nuclear Security Supervisor
- b. Station Superintendent
  - During normal working hours, the Station Superintendent should be reached over the Station gai-tronics or by utilizing his "beeper" pager. During off normal working hours, manually telephone his office and home using the numbers listed in Administrative Memorandum No. 37. If there is no answer, then attempt a page. Upon being notified, the Station Superintendent shall then confer with the Shift Supervisor and ascertain the degree of response that may be necessitated by the plant event.
    - NOTE: If the Station Superintendent does NOT respond within five minute, re-initiate the page. If he does not respond to a second page, the Assistant Station Supervisor, Operations, should be contacted. If neither respond, the Shift Supervisor should use his own judgment to deal with the situation.
  - The Station Superintendent can then authorize the Shift Supervisor to tape an announcement on the Telephone Pager located in the Shift Supervisor's office. (The Station Superintendent may elect to perform this evolution himself over the telephone. If so, the Station Superin-

## EI 1300.05.2

tendent should call the Edison Operator and request to be connected to the Telephone Pager.)

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- NOTE: The announcement should include; 1) the Emergency Action Level classification, 2) the level of response required, and 3) a brief description of plant conditions.
- The Shift Supervisor or his designee shall then activate the pagers of the key emergency response personnel as listed in Administrative Memorandum No. 37.
- 4. When paged (beeped), those individuals must telephone the Edison Operator who shall connect them with the Telephone Pager thus allowing them to hear the recorded message.
- These individuals shall then "call in" or notify additional personnel as required to provide adequate response to the event by using Administrative Memorandum No. 37.
  - NOTE: The NRC resident insepctor can be telephoned or paged in accordance with AD 1827.17 if necessary.
- 5.1.4 Notification of the following agencies must occur:
  - NOTE: When notifying an outside agency, record the name of the individual contacted and request a return telephone call from the agency to verify notification.
  - a. Sheriff's Department, Ottawa County, as soon as possible after a declaration is made (normal time is approximately 15 minutes)
  - b. NRC Region III, Office of Inspection and Enforcement; NRC, NRR, Emergency Incident Response Center, Bethesda, Maryland (This is accomplished by the NRC Emergency Notification System - Red Phone) within one hour.

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- 5.1.5 Continue in the capacity of interim Emergency Duty Officer until relieved by the assigned Emergency Duty Officer.
- 5.1.6 Assessment actions which shall include:
  - Increased surveillance of in-plant instrumentation.
  - b. Dispatching of shift personnel to the identified problem area for confirmation and visual assessment of the problem.
  - c. Dispatching of onsite RMT's to monitor for possible releases.
  - d. If a radiological accident is occurring, surveillance of the in-plant instrumentation necessary to obtain meteorological and radiological data required for calculating or estimating projected doses. This dose assessment activity shall continue until termination of the emergency in order that the updating of initial assessments may be provided to all concerned offsite agencies and to the EDO.
  - e. Greater emphasis on offsite monitoring efforts and dose projection efforts extending to distances much further from the plant. Additionally, since the projected doses are likely to be much closer to the EPA PAG's, greater emphasis shall be placed on the assessment of release duration.

Dose assessment shall be in accordance with the Emergency Offsite Dose Estimates Procedure, AD 1827.10.

- f. Should any potential danger to the general public be determined, a precautionary evacuation out to two (2) miles may be recommended.
- 5.1.7 Corrective actions by plant operators shall be according to established procedures that place the plant in a safe condition.

#### 5.2 Emergency Duty Officer (EDO)

The Emergency Duty Officer, upon being informed that an General Emergency has been declared, shall:

5.2.1 Report to the Emergency Control Center and assume the position of Emergency Duty Officer in the onsite emergency organization, relieving the Shift Supervisor of this duty.

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- 5.2.2 Evaluate the information, data, and methods utilized by the Shift Supervisor in making his determination in order to ensure that the proper emergency classification has been made.
- 5.2.3 Activate the ECC according to the Emergency Control Center Activation procedure, EI 1300.08.
- 5.2.4 Continue assessment actions initiated by the Shift Supervisor.
- 5.2.5 Confer with the Emergency Operations Manager concerning distribution of a thyroid blocking agent to those TECo emergency workers involved in the Station response as specified in AD 1827.12, Protective Action Guidelines.
- 5.2.6 Recommend protective actions to the Ottawa County Sheriff as required by assessment results per AD 1827.12, Protective Action Guidelines.

#### 5.3 Shift Operations Personnel

- 5.3.1 Control Room operators shall maintain safe operations of the Station and minimize the potential hazards to Station personnel and the general public as directed by the Shift Supervisor.
- 5.3.2 In the event that the Shift Supervisor is incapacitated, his duties and responsibilities indicated in Step 5.1 shall be assumed by the Assistant Shift Supervisor in the Control Room until relieved by a qualified Shift Supervisor.
- 5.3.3 Equipment and auxiliaries operators shall maintain safe operations of the plant as directed by the Shift Supervisor.
- 5.3.4 The Shift Technical Advisor shall provide technical and analytical support in the diagnosis of off-normal events. He shall also advise and assist the Shift Supervisor on matters pertaining to the safe and proper operation of the plant with regards to nuclear safety.
- 5.4 Shift Chemistry and Radiation Tester (C&RT)

5.4.1 The shift C&RT shall report immediately to the Health Physics Monitoring Room to await instructions from the Shift Supervisor or Chemist and Health Physicist.

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- 5.4.2 The shift C&RT shall provide radiological monitoring for the Fire Brigade in the event of a fire in RACA.
- 5.4.3 The shift C&RT shall monitor all injured personnel before they leave the site. An off-shift C&RT shall accompany or meet the contaminated personnel at the offsite medical facilities.

## 5.5 Fire Brigade

- 5.5.1 The Fire Brigade Captain shall respond to any announced fire, evaluate the situation, direct the Fire Brigade, and keep the Shift Supervisor informed of the status of the fire.
- 5.5.2 Personnel assigned to the Fire Brigade shall respond to any announced fire with appropriate fire fighting and protective equipment and extinguish the fire as directed by the Fire Brigade Captain.
- 5.5.3 The first Fire Brigade Captain arriving on the scene should remain in charge of the fire until termination of the emergency or relieved by the Fire Chief or Assistant Fire Chief.

#### 5.6 First Aid Team

- 5.6.1 The First Aid Team Leader shall respond to any announced personnel injuries, evaluate the situation, direct the First Aid Team and keep the Shift Supervisor informed of the status of the injured individual(s).
- 5.6.2 Personnel assigned to the First Aid Team shall respond to any announced personnel injury with appropriate first aid supplies and provide the necessary first aid treatment.

#### 5.7 Nuclear Security Force

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5.7.1 The Nuclear Security Supervisor, upon notification by the Shift Supervisor that a General Emergency exists, shall implement the Industrial Security Plan Procedure, AD 1808.00. 5.7.2 Nuclear Security Officers shall maintain security of the Station as directed by the Nuclear Security Supervisor.

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- 5.8 Radiation Monitoring Team (RMT)
  - 5.8.1 All qualified non-chemistry and health physics RMT members will report to the turbine deck assembly area adjacent to the OSC.
  - 5.8.2 The OSC Manager will designate RMT members as to their assignment as offsite or onsite.
    - a. A list of qualified RMT's is found in Administrative Memo 42.
    - b. Only one member of each team should be from the C&HP section.
  - 5.8.3 If requested by the EDO, offsite RMT's will be dispatched to the Radiological Testing Laboratory (RTL) for further instructions.
  - 5.8.4 RMT's responding from offsite will report to the RTL for further assignment.

#### 5.9 Plant Staff

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Members of the plant staff that have been informed of a Site Emergency shall proceed to their designated locations and perform their assigned functions.

- 5.9.1 The Plant Operations Manager shall proceed to the Control Room. He shall direct plant operations and plant damage control efforts. He shall also keep the Station Operations Manager advised of plant operations and plant damage control efforts.
- 5.9.2 The Operations Engineer shall proceed to the Control Room. His functions are to supervise control room activities, to perform on-the-spot operational analysis as required to assist the Shift Supervisor, and keep the Plant Operations Manager informed of current plant conditions.

#### 5.10 Onsite Personnel

5.10.1 Personnel, who do <u>NOT</u> have specifically assigned duties shall proceed to areas as prescribed in AD 1827.11 Assembly, Accountability, and Subsequent Evacuation.

## 5.11 Offsite Personnel

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5.11.1 Station personnel whose emergency response is at the station and who are normally authorized non-escorted access, will be admitted upon verbal communications with security.

- 5.11.2 Support group personnel requested to respond to the site will report to the Security Station located at the north end of the Davis-Besse Administration building for subsequent assignment.
  - a. Personnel directed to the station, but who are normally granted escorted access, will be admitted unescorted upon written authorization from the Station Operations Manager.
  - b. Personnel directed to the station, but who are normally granted escorted access, will be admitted with an escort upon verbal authorization from the Shift Supervisor or EDO.
- 5.12 Offsite Agencies and Organizations
  - 5.12.1 The Carroll Township Ambulance Service shall provide transportation service as required for offsite medical treatment.
  - 5.12.2 The H. B. Magruder Memorial Hospital shall provide offsite medical treatment for personnel as required.
  - 5.12.3 The Carroll Township Fire Department shall provide primary response to fire alarms onsite as required.
    - a. The Village of Oak Harbor Fire Department shall provide alternate response to fire alarms onsite as required through mutual aid with Carroll Township.
  - 5.12.4 The Ottawa County Sheriff's Department is experienced in providing area control, communications assistance, and direct handling of the local population, including evacuation, should it become necessary. The Sheriff's Department provides 24 hour radio communication coverage with the Shift Supervisor at DENPS and is the lead offsite governmental agency contacted in the event of an emergency at the site.

6. TERMINATION

- 6.1 The Emergency Duty Officer and Station Operations Manager have joint responsibility for determining and declaring when the emergency situation is stable.
- 6.2 The Emergency Duty Officer shall assure notification of all offsite organizations and TECo personnel that the emergency has terminated.
- 6.3 A written summary will follow notification of termination within 8 hours.

EDO/SHIFT SUPERVISOR CHECKLIST FOR GENERAL EMERGENCY

### ATTACHMENT 1

NOTE: If changing from a prior emergency classification checklist, complete steps <u>NOT</u> already accomplished by the previous checklist. Then attach all the previous checklists used to this one. Place N/A in steps that are not applicable.

ACTTON	REQUIREI				DAT	In case of the local division of the local d	ON COMPI TIME	LETED INITIALS
AUTION	REQUIRED	2			DAI	<u>-</u>	1 1.116	INITIADO
1.	Initiate as requi		ectiv	e action				
2.				te announce- appropriate				
3.	emergeno and make ment as required	to per to per to per to solution	Jai-t appro rsonn hounc smoki	type of ronics twice priate annous el assembly e no eating, ng until	nce-			
4.	Confirm (See EI			Classificati	on			
5.	Conduct	necess	sary	notification	:			
	a.			Alarm Stati Ext. 280 or				
		NOTE :		operator wil	1 make ca	alls fo	r emerge	mergency the S.A.S. ency support and/or ties or personnel.
		4. 5.	Emer Serv Life Air H.B. Hosp St. Hosp	Department( gency Medica ice (Ambulan Flight Ambulance Magruder ital Charles ital	1			
		6.	Edis	on Operator				

EDO/SHIFT SUPERVISOR CHECKLIST FOR GENERAL EMERGENCY

ATTACHMENT 1 (Con't)

					ACTION	COMPLE	TED
TION	REQUIRED			DATE	TI	ME	INITIALS
	b.		urity Super- 556 or 557)				
	c.	Edison Cent (Ext. 88-00 259-5000)	rex Operator _ 0 or				
	d.	Station Man (See Step 5 of this pro	.1.3(b)				
		1. Station tenden	n Superin- t -				
		NOTE :	The Station Su is responsible County Sheriff Emergency Acti	for a upon	notifyin declara	g the	Ottawa
			y Emergency se Personnel: _				

Emergency Duty Officer, Assistant Station Superintendent Operations, Chemist and Health Physicist, Nuclear Services Director, Emergency Planning Supervisor, Nuclear Security Manager, News Media Relations Supervisor, Technical Engineer, Maintenance Engineer, and Operations Engineer.

\*NRC (use the Emergency Notification System - Red Phone)

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AC'

\*NOTE: The NRC notification must be made within one hour and should be made by station management. Health physics information should be transmitted using the NRC Health Physics Network by the Chemist and Health Physicist or his designee. (Dial 22 for NRC Headquarters - 23 for NRC Region 3 Office.)

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EDO/SHIFT SUPERVISOR CHECKLIST FOR GENERAL EMERGENCY

ATTACHMENT 1 (Con't)

ACTION	REQUIRED		DATE ACT	TIME	INITIALS
6.		applicable steps of checklist (Attachment 3			
		00.08, Emergency Control			
		ctivation)			
7.	Center Ad	ctivation Confirmation			
	a.	Emergency Control Center (EI 1300.08)			
	b.	Operations Support Center (EI 1300.06)			
	с.	Technical Support Center (EI 1300.07)			
	d.	Emergency Support Center (EI 1300.09)			
8.	Conduct 1	Periodic Updates for:			
	a.	TED Personnel			
	b.	NRC			
	с.	Ottawa County Sheriff			
9.		tions change, check Ol to determine			
		ssification is appro-			
	priate				
10.	When the notify:	condition is resolved			
	а.	TED Personnel			-
	b.	NRC			
	с.	Ottawa County Sheriff			
Review	ed by		Filed by		
		tation Superintendent	-	Emergen	cy Planning
				Sup	ervisor

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### Davis-Besse Nuclear Power Station

Unit No. 1

Emergency Plan Implementing Procedure EI 1300.06

Operations Support Center Activation

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Record of Approval and Changes

Prepared by	G. J. Reed	5/30/80
		Date
Submitted by	C. E. Wells	6/13/80
	Section Head	Date
Recommended by_	BeBer	10/13/8
	SRB Chairman	Date
QA Approved	NIR	
	Quality Assurance Manager	Date
Approved by	Tomma	8/18/80
	Station Superintendene	Date

No.	Recommendation	Date 1/21/81	QA Approved NA	Date	Sta. Supt. Approved	Date
2	D. W. Briken	4/16/81	NA		Tominor	my 4/27/81
3	Am Jung	10/19/82	NT		Form	\$ 113/82

### 1. PURPOSE

To outline the personnel required for activation of the Operations Support Center (OSC) and their responsibilities and actions during an emergency at Davis-Besse Nuclear Power Station.

2. SCOPE

Describes the actions of personnel assigned to the OSC when the Shift Supervisor or Emergency Duty Officer has required its activation.

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- REFERENCES
  - 3.1 Davis-Besse Nuclear Power Station Emergency Plan

3.2	Station Response to Emergencies	EI 1300.00
3.3	Unusual Event	EI 1300.02
3.4	Alert	EI 1300.03
3.5	Site Emergency	EI 1300.04
3.6	General Emergency	EI 1300.05
3.7	Administrative Controls	EI 1300.12

3.8 Davis-Besse Nuclear Power Station Emergency Plan Telephone Directory

### 4. DEFINITION

4.1 <u>Operations Support Center</u> (OSC) - An area in the Station in close proximity to the Control Room to which Station support personnel report and await instructions from the Shift Supervisor, Emergency Duty Officer or Station Operations Manager.

### 5. ACTIONS

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- 5.1 The OSC is the lunchroom and the assembly area directly adjacent to the lunchroom on the 623' elevation of the Turbine Building.
- 5.2 The first Station management individual to arrive at the OSC shall inform the Control Room that the OSC is manned.
- 5.3 Maintenance Engineer

5.3.1 The Maintenance Engineer is the OSC Manager.

5.3.2 The alternate for the Maintenance Engineer is either the Lead Maintenance Support Engineer or the Lead Instrumentation and Control Engineer as designated by the Maintenance Engineer.

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- 5.3.3 The Maintenance Engineer is responsible for the activation of the OSC.
- 5.3.4 The Maintenance Engineer shall proceed to the OSC and, if NOT previously performed, notify the Control Room that the OSC is manned.
- 5.3.5 As personnel arrive at the OSC, the following three groups should assemble immediately:

a. First Aid Team Members

b. Fire Brigade Members

c. Radiation Monitoring Team Members

Each group should have at least 2 dedicated members and even though some plant personnel are qualified for more than one group, they should NOT all leave the OSC to respond to one casualty and leave the other groups "short-handed" or unmanned.

- 5.3.6 As available, the Maintenance Engineer shall provide, per request by the Shift Supervisor or EDO, the following:
  - a. Radiation Monitoring Teams
  - b. First Aid Support

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c. Fire Fighting Support

d. Chemistry Support

- e. Health Physics Support
- f. Emergency Maintenance Support
- 5.3.7 The Maintenance Engineer also coordinates and directs maintenance and equipment modification activities in support of Station operation, and keeps the Plant Operations Manager informed of current plant conditions.

- 5.4 If Station personnel assembly has been directed by the Shift Supervisor, other Station assembly areas shall report personnel accounting results to the OSC.
  - 5.4.1 The OSC shall coordinate with the Nuclear Security Force to ensure complete personnel accountability; and if persons are found missing, to initiate a search per AD 1827.16, Search and Rescue.
  - 5.4.2 Only assigned personnel should assemble at the OSC.

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### 5.5 Onsite Personnel

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- 5.5.1 All onsite personnel NOT assigned specific actions or responsibilities for emergency response should assemble in areas designated in AD 1827.11 Assembly, Accountability, and Subsequent Evacuation.
- 5.6 Offsite Personnel
  - 5.6.1 Station personnel whose emergency response is at the station and who are normally authorized non-escorted access, will be admitted upon verbal communications with security.
  - 5.6.2 Support group personnel requested to respond to the site will report to the Security Station located at the north end of the Davis-Besse Administration Building for subsequent assignment.
    - a. Personnel directed to the station, but who are normally granted escorted access, will be admitted unescorted upon written authorization from the Station Operations Manager.
    - b. Personnel directed to the station, but who are normally granted escorted access, will be admitted with an escort upon verbal authorization from the Shift Supervisor or EDO.
- 5.7 A record of activities of the OSC shall be maintained to the best ability of personnel present. Record disposition shall be in accordance with EI 1300.12, Administrative Controls.
- 5.8 Attachment 1 is a list of typical equipment that may be available in the Health Physics Monitoring Room proximity.

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Additional equipment is available from the Emergency Radiation Monitoring Equipment locker as indicated in Attachment 2. This equipment is inventoried and maintained specifically for emergency use.

A,

	EQUIPMENT LIST ATTACHMENT 1	
Instrument	Model	Typical Number Available
Survey Meter	RO2 or 2A	3 ea.
Survey Meter	E400	2 ea.
Survey Meter	PAC 4G3	1 ea.
Survey Meter	PNR4 or Rascal	1 ea.
Survey Meter	E520	2 ea.
Hand and Foot Monitor		1 ea.
Survey Meter	RM 14	5 ea.
	OTHER EQUIPMENT	
Air Sampler		2 ea.
Dosimeter, 0-500 mR		50 ea.
TLD		50 ea.
Cartridge Respirator		40 ez
Airline Respirator		40 ea.
Protective Clothing (	(Anti-C's)	>100 ea.

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HEALTH PHYSICS MONITORING ROOM PROXIMITY

### EMERGENCY RADIATION MONITORING EQUIPMENT LOCKER CHECKLIST ATTACHMENT 2

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LOCATION: 623' - Elevation, east side of Turbine Deck by entrance to the center stairway

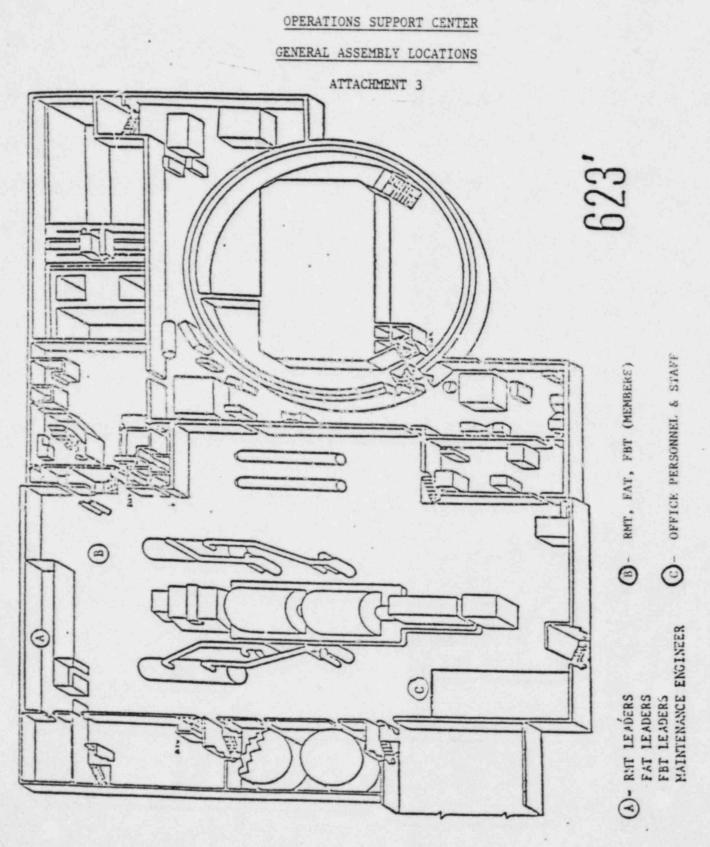
Designated for the Control Room/Operations Support Center

Low volume air sampler SAM-2 (Operation described in AD 1850.05) \*PIC-6 \*E-400 Particulate and silver zeolite filters

Designated for the Interim Technical Support Center

Low volume air sampler SAM-2 (Operation described in AD 1850.05) \*E-520 Particulate and silver zeolite filters

\*These instruments can be substituted with equivalent types.



T-110+	Original, Responsible Section Head Action — File Copy, Master File
COPIES TO BE MC TSC (1) ECC (2)	DIFIED FOR IMMEDIATE IMPLEMENTATION
	uperintendent (1)

DAVIS-BESSE NUCLEAR POWER STATION - UNIT 1 TEMPORARY MODIFICATION REQUEST ED 6926

SECTION 1

PROCEDURE	TITL	AND NUMBE	R			
	EI	1300.07	TECHNICAL	SUPPORT	CENTER	ACTIVATION

REASON FOR CHANGE

Gine

TO IDENTIFY CORRECT EMERGENCY RESPONSE PERSONNEL TITLES.

CHANGE	The follow	ving secti	ons of this procedures should read:
Page 2,	Section(s)	d.	Facility Engineering General Supervisor Instrumentation and Control Systems Engineer Nuclear Systems and Analysis Engineer
Page 3,	Section(s)	5.5.1 5.5.2	The Primary Onsite Assessment Manager is the Nuclear Systems and Analysis Engineer The Alternate Onsite Assessment Manager is the Instrumentation and Control Systems Engineer

S PROCEDURE REVISION REQUIRED Yes X No If no	), this modification is valid until
Ron Durdel Ron Durdel	DATE 3/30/83
APPROVED BY M Denim	DATE 3-31-83
APPROVED BY Q. G. Fairs	DATE 3 - 3/- 83
SUBMITTED BY (Section Head), Hersch	DATE 3-31-83
RECOMMENDED BY (SRB Chairman)	DATE 4/5/83
DA APPROVED BY (Manager of Quality Assurance)	DATE
APPROVED BY (Station Superintendent)	DATE 4/5-183

		- 100		-
SE	CTI		N	2
~~	~	-		-

COMMENTS

		SECTION 3	
SAFETY	REVIEW	•	
-			
Yes 🗆	No X	NSR change in the facility as described in the FSAR	
Yes 🗖	No 🕅	NSR change in the procedures as described in the FS	AR.
Yes 🗖	No 💢	NSR test or experiment not described in the FSAR.	
Yes 🗔	No X	Change in the Technical Specifications.	
NOTE:		he above Section III are "Yes", a Section IV Safety Evalu 	ation shall be performed, unless this is part of a FCR.
Yes 🗖	No X	Decrease in the effectiveness of the Industrial Securit NPC concurrence.	ty Plan. If this is "Yes", the change cannot be made without
		SECTION 4	
SAFETY	EVALUATION		
PK 🔲	No 💢	Twa supposities of occurrence or the consequences on previously realized in the Screty Analysis Report #	f an accident or mantunction of equipment important to referry tay be increased.
Yes 🗖	No K	A possibility for an accident or malfunction of a diff Report may us created.	erent type than any evaluated previously in the Safety Analysis
Yes 🗖	No 💢	The margin of safety as defined in the bases for any "	Technical Specification is reduced.
NOTE		ection IV is "Yes", an "Unreviewed Safety Question" is i e. "FCR Noif spolicable)	nvolved and the change cannot be made without NRC
		SECTION 5	
	ETIONS OR A 838.00, IF API		FICATION MUST BE SUBMITTED FOR AD 1805.02 AND/
Yes 🗖		AD 1805.02 Temporary Modification submitted	
Yes 🗖	No 🗔	AD 1838.00 Temporary Modification submitted	
		SECTION 6	
FOR ADD		ETIONS, NSR MODIFICATIONS, AND MODIFICATION	NS REQUIRING SAFETY EVALUATIONS, AND NSR/NON-
SRB Com	ments:		
SRB Reco	mmendation:		Date
		SECTION 7	
STATION	SUPERINTER	NDENT APPROVAL	DATE
-			
DISTRIBU			
Master Fil OQAS Section He	01	ation Superintendent ffice Supervisor	

### Davis-Besse Nuclear Power Station

### Unit No. 1

Emergency Plan Implementing Procedure EI 1300.07

Technical Support Center Activation

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Record of Approval and Changes

Prepared by	G. J. Reed	5/30/80
		Date
Submitted by	C. E. Wells	6/13/80
	Section Head	Date
Recommended by_	SRB Chairban	6/13/80
	SRB Chairban	bate
QA Approved	NIP	
	Quality Assurance Manager	Date
Approved by	Tomma	8/18/80
	Station Superintendenz	Date

Revision			QA	Sta. Supt.	
No.	Recommendation	Date A	pproved	Date Approved Date	
1	Lecommendation	1/21/81	NA	Date Approved Date	131
	Am Dreng		NA	Jonung 7/21	182
	Amaring			To manay 1/6.	173
	Amaring		· 1 A-	TE munay/sma	4/7/83
1					

### 1. PURPOSE

To outline the personnel required for activation of the Technical Support Center (TSC) and their responsibilities and actions during an emergency at Davis-Besse Nuclear Power Station.

### 2. SCOPE

Describe the actions of personnel assigned to the TSC when the the need for its activation has been determined.

### 3. REFERENCES

- 3.1 Davis-Besse Nuclear Power Station Emergency Plan
- 3.2 Davis-Besse Nuclear Power Station Emergency Plan Telephone Directory

3.3	Station Response to Emergencies	EI 1300.00
3.4	Unusual Event	EI 1300.02
3.5	Alert	E0.00E1 13
3.6	Site Emergency	EI 1300.04
3.7	General Emergency	EI 1300.05
3.8	Administrative Controls	EI 1300.12

### 4. DEFINITION

4.1 <u>Technical Support Center</u> (TSC) - An area onsite in close proximity to the Control Room which has the capability to display and transmit plant status information to the individuals who are knowledgeable of and responsible for engineering and management support of reactor operations in the event of an emergency situation.

### 5. ACTIONS

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5.1 The Technical Support Center is located at the Davis-Besse site, along Ohio State Route #2, in the Davis-Besse Administration Building. The primary function of the TSC is to house and support an organization that provides management and technical assistance to the Station operations personnel during emergency conditions and to prevent or mitigate the consequences of abnormal plant conditions. The TSC provides direct voice and data communication with the Control Room and serves as a primary communications contact with the offsite emergency organization of Toledo Edison. Visual observation of the Control Room will be available through closed-circuit television (CCTV). The TSC also contains the DADS to enable the TSC staff to acquire plant data and information necessary for technical evaluations needed to handle emergency conditions and recovery operations. Two communication lines to the NRC are available for direct communication to the NRC Health Physics Network and Emergency Notification System.

The TSC contains work space for up to 25 people, including a main work area for 15 people and 3 conference areas, one of which will accommodate 8 people.

- 5.2 The TSC shall be activated at the Alert Emergency Classification level.
- 5.3 The first Station management individual to arrive at the TSC shall notify the Control Room that the TSC is manned.
- 5.4 Station Operations Manager

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- 5.4.1 The primary Station Operations Manager is the Station Superintendent.
- 5.4.2 The alternate Station Operations Manager is the Assistant Station Superintendent, Operations.
- 5.4.3 The Station Operations Manager is responsible for assuring the activation of the TSC.
- 5.4.4 The Station Operations Manager should proceed to the TSC and, if NOT previously performed, notify the Control Room that the TSC is manned.
- 5.4.5 The Station Operations Manager should assure the following individuals arrive at the TSC:
  - a. Nuclear Engineering Manager
  - b. Technical data communicator
  - c. Technical Engineer

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- d. Plant Instrumentation and Control Systems Engineer
- e. Plant Nuclear Systems Engineer
- 5.4.6 The Station Operations Manager may establish the

following telephone communications loops as needed per the DBNPS Emergency Plan Telephone Directory:

- a. Technical Data Loop
- b. Technical Management Loop
- c. Policy Management Loop
- d. Public Relations Loop

NOTE: If personnel are required as communicators, requests should be directed to the Operations Support Center.

- 5.4.7 The Station Operations Manager should assign an individual(s) to distribute applicable emergency equipment listed in Attachment 1, (ie. log book, telephone books, and calculators).
- 5.4.8 Upon arrival, the Onsite Assessment Manager will assume control of the TSC from the Station Operations Manager.
- 5.5 Onsite Assessment Manager

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- 5.5.1 The primary Onsite Assessment Manager is the Nuclear Engineering Manger.
- 5.5.2 The alternate Onsite Assessment Manager is the Plant Nuclear Systems Engineer.
- 5.5.3 The Onsite Assessment Manager, upon being informed that as Alert level emergency exist, shall proceed to the Technical Support Center (TSC).
- 5.5.4 The Onsite Assessment Manager's responsibilities and duties include, but are NOT limited to:
  - Directing the engineering assessment activities of the TSC.
  - b. Coordinating the engineering assessment activities of engineering support personnel from the NSSS vendor and the Architect Engineer.
  - c. Ensuring that adequate mechanical, electrical, instrumentation and control, and technical engineers are available to perform engineering assessment, as required.

- d. Ensuring that adequate support personnel are available to assist in records disposition, updating status board, and providing communications to the Control Room and Nuclear Regulatory Commission, as necessary.
- e. Reporting to the Station Operations Manager and appraising him of engineering assessment activities, equipment operation problems and any alterations in the normal lineup or operation of plant systems.

### 5.6 Technical Engineer

- 5.6.1 The primary technical engineering individual is the Technical Engineer.
- 5.6.2 The alternate technical engineering individual is the Nuclear Performance Engineer.
- 5.6.3 The Technical Engineer shall assist in coordinating and performing plant assessment activities.
- 5.6.4 The Technical Engineer shall, as necessary, assure that radiological controls are in place such as:
  - a. TSC monitored for airborne activity by operation of a portable air activity monitor.
  - b. A high/low survey instrument is utilized by personnel leaving the ISC for entry into the plant.
  - c. Stepoff pads and contamination survey instrutents are provided at the entrance to the TSC from the plant when required.
- 5.6.5 The Technical Engineer shall assure that personnel assembled in the TSC are briefed on conditions and monitoring methods in place while the TSC is activated.
- 5.7 Radcon Operations Manager

- 5.7.1 The Radcon Operations Manager is the Chemist and Health Physicist.
- 5.7.2 The alternate Radcon Operations Manager is the Chemistry and Radiochemistry Supervisor or the Health Physics Supervisor.

- 5.7.3 The Radcon Operations Manager directs and coordinates the radioactive waste and radiological controls aspects of Emergency Operations and keeps the Plant Operations Manager informed of radwaste and radcon activities pursuant to the emergency.
- 5.7.4 The Radcon Operations Manager is responsible for coordinating the activities of the Health Physics Monitoring Room portion of the Operations Support Center, however he may do this from his office located in the Technical Support Center. He is also responsible for relaying health physics information over the NRC Health Physics Network phone which is located there.
- 5.7.5 The Radcon Operations Manager shall supervise the onsite radiation surveys and survey results analysis.
- 5.8 Plant Staff
  - 5.8.1 Plant Staff, such as the operations engineering staff, clerical support, etc., who are NOT assigned to other emergency functions, shall (if in protected area) report to the Operations Support Center and be directed to the TSC as needed.
  - 5.8.2 The Technical Engineering staff who are not assigned other emergency functions, shall report directly to the TSC.
  - 5.8.3 The Plant Staff shall assist in accident assessment, as required.
- 5.9 Technical Support Center Activity
  - 5.9.1 Communications with the Control Room, Emergency Support Center, Operations Support Center, Emergency Control Center, and the NRC will be established as specified by the Onsite Assessment Manager or the Station Operations Manager.
    - a. The Data Acquisition and Display System (DADS) terminals in the TSC will provide sufficient station information and data communication for personnel to evaluate and diagnose station conditions and activities so as to conduct emergency operations in an orderly manner.
    - b. The DADS provide data communication between the ECC, TSC, Control Room and Emergency Support Center.

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- c. The DADS can monitor plant transients during and following most events expected to occur during the life of the station.
- 5.9.2 The condition of the reactor and essential safetyrelated systems shall be assessed and steps taken to assure protection of Station personnel and the public.
- 5.9.3 Analysis of plant conditions shall be performed to determine reactor core status. Containment Radiation Plots in Attachment 2 provide the relationship between containment radiation levels and the time after plant shutdown for various amounts of fuel inventory released into containment. This information can be used to declare the applicable emergency classification.
- 5.9.4 Directives issued to the Control Room shall be assessed for potential adverse consequences before issuance this includes all offsite directives from government or company management organizations.
  - a. Directives to the Control Room should be done verbally as long as there is mutual agreement to all parties that the correct action is being taken.
  - b. If a disagreement occurs between the Control Room and the TSC, a written directive from the TSC should be forwarded to the Control Room signed by the Onsite Assessment Manager or Station Operations Manager.
- 5.9.5 Contact shall be made and support requested as required from the following organizations:
  - a. Babcock and Wilcox
  - b. Bechtel

- c. Nuclear Safety Analysis Center (NOTEPAD)
- 5.9.6 A record of activities of the TSC shall be maintained to the best ability of personnel present. Record disposition shall be in accordance with EI 1300.12, Administrative Controls.
- 5.9.7 The decision to deactivate the TSC shall be made by joint concurrence of the Onsite Assessment Manager, Station Operations Manager, Shift Supervisor and other key plant personnel once accident recovery has reached a point where continuous technical assessment and advisory functions are no longer necessary to mitigate the consequences of plant conditions.

### 5.10 Procedure for Activation of the Alternate TSC

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- 5.10.1 The Onsite Assessment Manager will direct the activation of an alternate TSC if the normal TSC becomes uninhabitable for any reason.
- 5.10.2 No more than three (3) persons assigned to technical support will be dispatched to the Control Room. The balance of the technical support staff (including vendor, TED and NRC personnel) will be located at a suitable position as close to the Control Room as possible. Communications will be established by telephone, messenger, telecopier, etc. between technical support personnel and the Control Room. Also, communications will be established at least by telephone or messenger between the relocated TSC and the ECC.

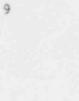
# Technical Support Center Equipment List Attachment 1

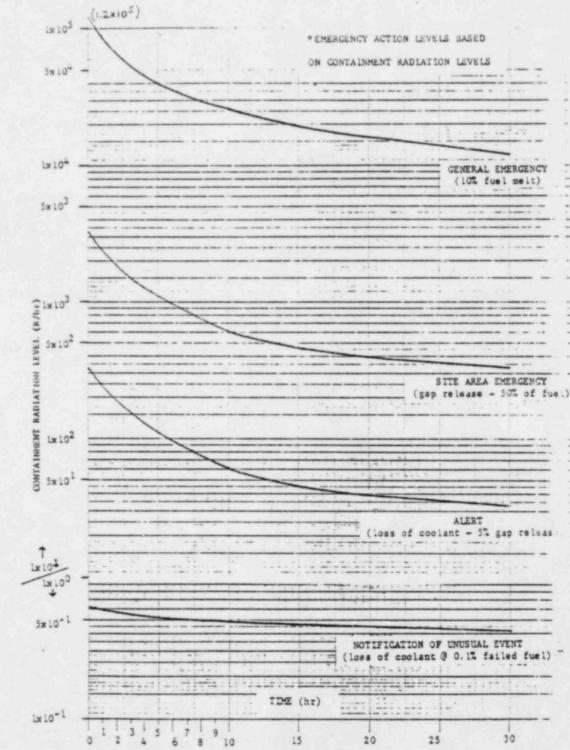
Location	Item	Quantity
	Log Book	1 ea.
	E-Plan, Supporting & Implementing Proc.	1 ea.
	State of Ohio Emergency Plan	1 ea.
	FSAR	1 ea.
TSC Library	USAR	1 ea.
	Admin. Manual (Vol 1, 2, 3)	1 ea.
	Tech. Specs.	1 ea.
	Rad. Prot. Manual	1 ea.
	Drawing Change Notice (DCN) Log	1 ea.
	TI-59 Calculator	2 ea.
	Emergency Plan Telephone Directories	5 ea.
	Telephone Headsets	4 ea.
	TI-55 Calculator	7 ea.
	Station Procedures (as Designated by the Tech. Engineer)	

### List of Drawings In TSC Library

E-81 M-580A - C 203F 233F 241D ( E-82 M-581A - G 203H 233G 241E ( E-101 M-589 203J 234A 241F ( E-102 M-592 206F 234B 241G ( E-103 206G 234C 241H ( M-102FW 207A 234D 241L ( M-102FW 207B 235A 246A ( M-103FW 207C 235B PS/PSU ( M-104FW 210E 236A ( M-105FW 210H 236B ( M-106FW 220B 236C ( M-107FW 229 236D ( M-108FW 230A 236D ( 231A 236H 231A 236H 231B 240A ( 231B 240A 231D 240B ( 233A 240C ( 233B 240D (	Electrical	Mechanical		ISIM		ISID	
E-81 M-580A - C 203F 233F 241D ( E-82 M-581A - G 203H 233G 241E ( E-101 M-589 203J 234A 241F ( E-102 M-592 206F 234B 241G ( E-103 206G 234C 241H ( M-102FW 207A 234D 241L ( M-102FW 207B 235A 246A ( M-103FW 207C 235B PS/PSU ( M-104FW 210E 236A ( M-105FW 210H 236B ( M-106FW 220B 236C ( M-107FW 229 236D ( M-108FW 230A 236D ( 231A 236H 231A 236H 231B 240A ( 231B 240A 231D 240B ( 233A 240C ( 233B 240D (	E-1 thru E-65B	M-001 thru M-196	203A	233D	241B	12501-ISII	0-003
E-82 M-581A - G 203H 233G 241E G E-101 M-589 203J 234A 241F G E-102 M-592 206F 234B 241G G E-103 206G 234C 241H G M-101FW 207A 234D 241L G M-102FW 207B 235A 246A G M-103FW 207C 235B PS/PSU M-104FW 210E 236A M-105FW 210H 236B M-106FW 220B 236C M-107FW 229 236D M-108FW 230A 236D 230A 236E 231A 236H 231B 240A 231D 240B 233A 240C 233B 240D	E-80		203B	233E	241C		006B
E-101 M-589 203J 234A 241F 6 E-102 M-592 206F 234B 241G 6 206G 234C 241H 6 M-101FW 207A 234D 241L 6 M-102FW 207B 235A 246A 6 M-103FW 207C 235B PS/PSU 6 M-104FW 210E 236A 7 M-104FW 210H 236B 7 M-106FW 220B 236C 7 M-107FW 229 236D 7 M-108FW 230A 236D 230A 236D 231A 236H 231A 236H 231B 240A 231D 240B 233A 240C 233B 240D 7	E-81	M-580A - C	203F	233F	241D		007
E-102 M-592 206F 234B 241G 206G 234C 241H 206G 234C 241H 207A 234D 241L 241C 207B 235A 246A 246A 207C 235B PS/PSU 207C 235B PS/PSU 210E 236A M-103FW 210E 236A M-105FW 210H 236B M-106FW 220B 236C M-107FW 229 236D M-108FW 230A 236D 230A 236E 231A 236H 231B 240A 231D 240B 233A 240C 233B 240D	E-82	M-581A - G	203H	233G	241E		010B
E-103 E-104 M-101FW 207A 234D 241L 4 M-102FW 207B 235A 246A M-103FW 207C 235B PS/PSU M-104FW 210E 236A M-105FW 210H 236B M-106FW 220B 236C M-107FW 229 236D M-108FW 230A 236E 231A 236H 231B 240A 231D 240B 233A 240C 233B 240D	E-101	M-589	203J	234A	241F		015
E-104 M-101FW 207A 234D 241L 4 M-102FW 207B 235A 246A 4 M-103FW 207C 235B PS/PSU M-104FW 210E 236A M-105FW 210H 236B M-106FW 220B 236C M-107FW 229 236D M-108FW 230A 236D 230A 236E 231A 236H 231B 240A 231D 240B 233A 240C 233B 240D	E-102	M-592	206F	234B	241G		017
M-102FW       207B       235A       246A         M-103FW       207C       235B       PS/PSU         M-104FW       210E       236A         M-105FW       210H       236B         M-106FW       220B       236C         M-107FW       229       236D         M-107FW       230A       236D         M-108FW       230A       236E         231A       236H       231B         240A       231D       240B         233A       240C       233B         233B       240D       233B	E-103		206G	234C	241H		019
M-103FW       207C       235B       PS/PSU         M-104FW       210E       236A         M-105FW       210H       236B         M-106FW       220B       236C         M-107FW       229       236D         M-108FW       230A       236D         M-108FW       230A       236E         231A       236H         231B       240A         233A       240C         233B       240D	E-104	M-101FW	207A	234D	241L		026A
M-104FW       210E       236A         M-105FW       210H       236B         M-106FW       220B       236C         M-107FW       229       236D         M-108FW       230A       236D         M-108FW       230A       236E         231A       236H         231B       240A         233A       240C         233B       240D		M-102FW	207B	235A	246A		027A
M-105FW       210H       236B         M-106FW       220B       236C         M-107FW       229       236D         M-108FW       230A       236D         230A       236E       231A       236H         231B       240A       231D       240B         233A       240C       233B       240D		M-103FW	207C	235B	PS/PSU		027B
M-106FW       220B       236C         M-107FW       229       236D         M-108FW       230A       236D         230A       236E       231A         231A       236H       231B         231D       240B       233A         233A       240C       233B         233B       240D       240D		M-104FW	210E	236A			028B
M-107FW 229 236D M-108FW 230A 236D 230A 236E 231A 236H 231B 240A 231D 240B 233A 240C 233B 240D		M-105FW	210H	236B			029A
M-108FW 230A 236D 230A 236E 231A 236H 231B 240A 231D 240B 233A 240C 233B 240D		M-106FW	220B	236C			029B
230A 236E 231A 236H 231B 240A 231D 240B 233A 240C 233B 240D		M-107FW	229	236D			030
231A 236H 231B 240A 231D 240B 233A 240C 233B 240D		M-108FW	230A	236D			031
231B 240A 231D 240B 233A 240C 233B 240D			230A	236E			033
231D 240B 233A 240C 233B 240D			231A	236H			034
233A 240C 233B 240D			231B	240A			035
233B 240D			231D	240B			036
			233A	240C			040A
2220 2414			233B	240D			040B
			233C	241A			041 046

ISID - In Service Inspection Diagram ISIM - In Service Inspection Isometric





Based on a report by J. Stewart Bland, P.O. Box 4154, Annapolis, MD 21403 dated January, 1983. Davis-Besse Nuclear Power Station

Unit No. 1

Emergency Plan Implementing Procedure EI 1300.08

Emergency Control Center Activation

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## Record of Approval and Changes

Prepared by	G. J. Reed	5/30/80
	그렇게 이 것이 안내는 것이야지?	Date
Submitted by	C. E. Wells	6/13/80
	Section Head	Date
Recommended by_	- BRBUL	1.1/3/60
	SRB Chairman	Date
QA Approved	NA	
	Quality Assurance Manager	Date
Approved by	- Th grung	81.8180
	Station Superintendent	Date

No.	SRB Recommendation	Data	QA	Sta. Supt.
1	BEBeyer	10/14/80	NA NA	Date Approved Date
2	PRSeyer	1/21/81	NA	TD Marry 11/11/80 TD Marry acs 1/31/81
5 -	Andring	6/22/82	NA	Jomung 7/2/82
4 -	Amorenzy	10/19/82	NA	Tomung 1/3/82
	mound			TO munay 12/27/02

### PURPOSE

To outline the personnel required for activation of the Emergency Control Center (ECC) and their responsibilities and actions during an emergency at Davis-Besse Nuclear Power Station.

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2. SCOPE

1.

Describe the actions of personnel assigned to the ECC when the need for its activation has been determined.

- 3. REFERENCES
  - 3.1 Davis-Besse Nuclear Power Station Emergency Plan
  - 3.2 Davis-Besse Nuclear Power Station Emergency Plan Telephone Directory

3.3	Station Response to Emergencies	EI 1300.00
3.4	Unusual Event	EI 1300.02
3.5	Alert	EI 1300.03
3.6	Site Emergency	EI 1300.04
3.7	General Emergency	EI 1300.05
3.8	Administrative Controls	EI 1300.12
3.9	Protective Action Guidelines	AD 1827.12
3.10	Emergency Offsite Dose Estimates	AD 1827.10

- 4. DEFINITION
  - 4.1 <u>Emergency Control Center</u> (ECC) A specifically designated location which is equipped to facilitate the control and coordination of emergency activities and assessments.

### 5. ACTIONS

- 5.1 The ECC is located at the DBNPS site along Ohio State Route 2 in the Administration Building.
  - a. Command and control of site-related emergency efforts affecting local response within the Emergency Planning Zone originate from this center.
  - b. The ECC contains communication links necessary for coordination with offsite organizations.

c. The ECC contains a terminal of the DADS (Data Acquisition and Display System) for acquiring necessary data for dose calculations.

2

- d. The ECC will serve as an interface with the TED Emergency Response Organization and Local, State, and Federal agencies.
- 5.2 The first Station management individual to arrive at the ECC shall notify the Control Room that the ECC is manned.

### 5.3 Emergency Duty Officer Activities

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- 5.3.1 The Emergency Duty Officer (EDO) is responsible for determining the need for and assuring the activation of the ECC.
- 5.3.2 The EDO shall proceed to the ECC and, if NOT previously performed, notify the Control Room that the ECC is manned and perform the steps as indicated in Attachment 3.
- 5.3.3 The EDO shall ensure the following individuals arrive at the ECC as needed:

a. Control Room Communicator

b. State and County Communicator

c. Teleprinter Operator

d. Corporate Management Communicator

- e. Public Relations Communicator
- f. Nuclear Regulatory Commission Communicator
- g. Radiation Monitoring Team Communicator
- h. Radiation Monitoring Teams
- i. Emergency Operations Manager
- j. Emergency Planning Supervisor
- k. Community Assistance Communicator
- 5.3.4 The EDO may request to the Station Operations Manager that part or all of the telephone communications loops be established.

5.3.5 The EDO shall assign an individual(s) to set-up necessary emergency equipment (located in the ECC and Radiological Testing Lab) as listed in Attachment 1.

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- 5.3.6 The EDO shall assign an individual(s) to perform dose calculations and dose assessment, and to operate the CRT terminal for the Data Aquisition and Display System..
- 5.3.7 The EDO shall ensure that Attachment 2 is completed correctly and supplied to the State and County Disaster Services Agencies.
  - a. This shall be accomplished as soon as possible after the start of the emergency.
  - b. Updates to Attachment 2 shall be supplied as requested by the State and County Disaster Services Agencies.
- 5.3.8 The EDO shall assume responsibility for distribution of potassium iodide to station personnel as per AD 1827.12 and to RMT's as per AD 1850.05.
- 5.3.9 The EDO shall, when necessary, recommend protective actions for the plume exposure pathway to the State and County Disaster Services Agencies per AD 1827.12, Protective Action Guidelines.
- 5.3.10 The EDO shall assign Radiation Monitoring Teams and inform Federal, State and local officials of the affected areas by sector and zone designators as shown on Attachment 4.

### 5.4 Emergency Operations Manager

- 5.4.1 The primary Emergency Operations Manager is the Nuclear Services Director.
- 5.4.2 The alternate Emergency Operations Manager is the Assistant Superintendent - Outage Mgmt.
- 5.4.3 The Emergency Operations Manager, upon being informed that an emergency exists, shall proceed to the ECC.
- 5.4.4 The Emergency Operations Manager's responsibilities and duties include, but are NOT limited to:

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a. Report to the Operations Director and appraise him of emergency operations and community relations matters.

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- b. Provide direction and guidance for the EDO.
- c. Notify the state and local officials that protective action for the injestion pathway may be necessary.
- d. Coordinate short term community assistance activities and response to the needs of local government officials.

### 5.5 Emergency Planning Supervisor

- 5.5.1 The Emergency Planning Supervisor, upon being informed that an emergency exists, shall proceed to the ECC.
- 5.5.2 The Emergency Planning Supervisor's responsibilities and duties include, but are NOT limited to:
  - Report to the Emergency Operations Manager and appraise him of emergency response activities.
  - b. Consult with and provide assistance to the EDO.
  - c. Provide guidance needed to coordinate the various emergency response activities.
  - d. Ensure contact is made as required to the following agencies (phone numbers are found in Administrative Memorandum No. 37):
    - \*1. Institute of Nuclear Power Operations (INPO)
    - 2. REMS Corporation
    - \*3. American Nuclear Insurers (ANI)
    - 4. Federal Bureau of Investigation
    - 5. State of Michigan
    - 6. Department of Energy (IRAP)
    - 7. Consumer's Power Company
    - 8. Detroit Edison Company
    - 9. Cleveland Electric Illuminating Co.
    - 10. Cincinnati Gas and Electric Co.

\*Must be notified at the Alert level or above.

Radiation Monitoring Teams

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5.6

5.6.1 The first RMT to arrive at the ECC shall perform the functions listed below:

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- a. Using appropriate survey instruments, survey the immediate areas surrounding the ECC and TSC.
- b. Standby with a Radiation Monitoring Team Kit and Protective Clothing Kit. Protective clothing to be used as directed.
- c. Check out equipment for operability.
- d. Perform surveys offsite as directed by the EDO.
- 5.6.2 Other RMT's that arrive at the ECC:

a. During normal working hours:

- Standby with a Radiaton Monitoring Team Kit and Protective Clothing Kit to be used as directed.
- 2. Check out equipment for operability.
- Perform surveys offsite as directed by the EDO.
- b. During off-normal working hours:
  - If not needed as an offsite RMT (as determined by EDO), assignment as onsite RMT's to the Radcon Operations Manager (at the Technical Support Center) or the Shift Supervisor (if the TSC is not as yet manned) will be made by the EDO after it is assured that additional aid is needed onsite.

### 5.7 Staff Personnel

- 5.7.1 Staff personnel such as the Nuclear Reliability Manager, and other personnel qualified as EDO who are NOT assigned to other emergency operations functions shall report to the ECC to assist the EDO, act as communicators, or perform other duties as directed by the EDO.
- 5.7.2 The staff will assist in communications as well as in assessment of the data supplied to the ECC.

5.7.3 The EDO may designate members of the staff to perform dose calculations and assessments.

6

- a. If a release of radioactive particulates or gases from the plant occurs, dose calculations should be performed in accordance with AD 1827.10, Emergency Offsite Dose Estimates.
- b. Total population exposure should be calculated in accordance with the following:
  - 1. Population exposure calculation:

Dose Rate x PET x PPA = man rem

Where:

Dose Rate = rate of exposure per unit time in rem

PET = Projected Exposure Time or after the release actual exposure time

PPA = Population in Plume Area

- NOTE: Population values can be derived from Figures 6, 7 and 8 in Appendix D of the DBNPS Emergency Plan.
- 2. Schedule for Calculation or Estimates:

8 hours after release - 1st day

24 hours after release - 1st day

every 12 hours thereafter for 3 days

daily beginning the 4th day after the incident.

5.7.4 A record of activities of the ECC shall be maintained to the best ability of personnel present. Record disposition shall be in accordance with EI 1300.12, Administrative Controls.

#### 5.8 Responding Personnel

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5.8.1 Station personnel whose emergency response is at the station and who are normally authorized non-escorted access, will be admitted upon verbal communications with security.

5.8.2 Support group personnel requested to respond to the site will report to the Security Station located at the north end of the Davis-Besse Administration Building for subsequent assignment.

7

- a. Personnel directed to the station, but who are normally granted escorted access, will be admitted unescorted upon written authorization from the Station Operations Manger.
- b. Personnel directed to the station, but who are normally granted escorted access, will be admitted with an escort upon verbal authorization from the Shift Supervisor or EDO.

### DAVIS-BESSE ADMINISTRATION BUILDING RADIOLOGICAL TESTING LABORATORY EQUIPMENT LIST

8

### CABINET "1"

Survey Equipment: RM-14 HP 260 Probe and Power Cord 1 ea. PRM-4A with HP 210 Probe 2 ea. PIC-6A Ion Chamber 1 ea. PRM-7 Micro R-Meter 2 ea. Dosimeter Charger 1 ea. 5 ea. Dosimeter 0-100R Dosimeter 0-5R 5 ea. 25 ea. Dosimeter 0-500mR TLD 25 ea. Check Source, CS-137 (~8µCi) 1 ea. Air Sampler, DC 4 ea. Batteries: 12-Volt 35-102 Booster 1 ea. "D" Cell, 1 1/2 Volt 12 ea. 9-Volt 12 ea. NEDA 220, 15 Volts for SK-1 Speakers 12 ea. "AA" Penlites 12 ea. Protective Clothing Kits, Each Contain: 12 ea. 1 Pair Cloth Coveralls -1 Pair Rubber Shoecovers 1 Cloth Hood -1 Cloth Cap 1 Pair Cottor Liner 1 Pair Rubber Gloves 1 Pair Plastic Booties Full Face Respirator Masking Tape -Other Protective Clothing: Plastic Shoe Covers 30 ea. Disposable Rubber Gloves 2 Boxes Cotton Glove Liners 30 ea. Paper Coveralls 30 pairs Miscellaneous: Smears 2 Boxes Smear Folders 2 Boxes Plastic Bags, Swirl Pack Tweezers Plastic Bags, Assorted -Extension Cord 1 Radiation Signs and Inserts Rope

> Attachment 1 Page 1 of 4

### DAVIS-BESSE ADMINISTRATION BUILDING RADIOLOGICAL TESTING LABORATORY EQUIPMENT LIST

9

### CABINET "2"

	Ottawa County Maps	2	ea.
	First Aid Kit	1	ea.
	Da'a Sheet #1 for AD 1850.05	25	ea.
	Data Sheet #1 for AD 1827.10	25	ea.
	Data Sheet #2 for AD 1827.10	25	ea.
	Stenographer Pads	-	
	Bottle of KI Tablets (Approx. 1000)	1	ea.
	Ledger		ea.
	Pencils and Pens	-	
	Felt Tip Pen	1	ea.
	Particulate Filter, 2 1/4"		ea.
Silver Zeolite Cartridges			ea.
	Duct Tape	-	
	Raincoats	12	ea.
	Radio		ea.
	Radio Charger		ea.
	*RMT Kit, Off-Site		ea.
	*RMT Kit, On-Site		ea.
	Seals	-	
	SAM-2 Analyzers	2	ea.
		-	

### Onsite Radiation Monitoring Team Kit

PIC-6A Survey Meter	1	ea.
E-520 Survey Meter	1	ea.
Flashlight	2	ea.
Dosimeter 0-500 mrem	2	ea.
Dosimeter 0-1 Rem	2	ea.
TLD	2	ea.
Smear Swipe NUCON	25	ea.
Tweezers	1	ea.
Planchet	10	ea.
Pencil	2	ea.
Note Paper	1	pad
Bag-Plastic	5	ea.
Screwdriver	1	ea.
RMT Procedure, AD 1850.05	1	set

\*Can be stored outside cabinet.

### DAVIS-BESSE ADMINISTRATION BUILDING RADIOLOGICAL TESTING LABORATORY EQUIPMENT LIST

### Offsite Radiation Monitoring Team Kit

PRM-7 Micro R-Meter	1	ea.	
E 520 Survey Meter	1	ea.	
Flashlight	2	ea.	
Dosimeter 0-500 mrem	2	ea.	
TLD	2	ea.	
Smear Swipe NUCON	25	ea.	
Tweezer	2	ea.	
Coins (Dime)	20	ea.	
Planchet	10	ea.	
Pencil	2	ea.	
Note Paper	1	pad	
Bag - Plastic		ea.	
Screwdriver	1	ea.	
RMT Procedure, AD 1850.05	1	set	
County Map - Ottawa	1	ea.	

Attachment 1 Page 3 of 4

### DAVIS-BESSE ADMINISTRATION BUILDING EMERGENCY CONTROL CENTER EQUIPMENT LIST

ITEM	QUANTITY	
TI 59 Calculator TI 57 Calculator Extra Paper for Printer		ea. ea.
Log Book		ea.
04, 05, 08)	10	ea.
Emergency Plan, Implementing and Supporting Procedures	2	sets
Davis-Besse Technical Specifications	1	ea.
State of Ohio, Michigan and Ottawa County Emergency Plans	1	ea.
*Emergency Plan Telephone Directories	5	ea.
*Telephone Headsets	5	ea.
*Gaitronics Headsets	1	ea.
*10 Mile EPZ Map Board	1	ea.
*NRC 10 Mile EPZ Map	1	ea.
*NRC 50 Mile EPZ Map	1	ea.
	TI 59 Calculator TI 57 Calculator Extra Paper for Printer Log Book Procedure Checklists (EI 1300.02, 03 04, 05, 08) Emergency Plan, Implementing and Supporting Procedures Davis-Besse Technical Specifications State of Ohio, Michigan and Ottawa County Emergency Plans *Emergency Plan Telephone Directories *Telephone Headsets *Gaitronics Headsets *10 Mile EPZ Map Board *NRC 10 Mile EPZ Map	TI 59 Calculator1TI 57 Calculator1Extra Paper for Printer-Log Book1Procedure Checklists (EI 1300.02, 031004, 05, 08)04, 05, 08)Emergency Plan, Implementing and Supporting Procedures2Davis-Besse Technical Specifications1State of Ohio, Michigan and Ottawa County Emergency Plans1*Emergency Plan Telephone Directories5*Telephone Headsets5*Gaitronics Headsets1*10 Mile EPZ Map Board1*NRC 10 Mile EPZ Map1

5

Attachment 1 Page 4 of 4

		Nuclear Incident ial Information
Date	Time:	Sheet No.:
Part I:		
Α.		:Classification of incident
в		
c	to the	:Wind direction
D		m/sec.: Wind speed
Ε		Ci/sec: Noble gas release rate
F		Ci/sec.: Radioiodine release rate
G		:Stability Class
н		
I	mr/hr @	miles.: field monitoring reading
	µci/cc @	miles: I-131 field survey
방송 등 것 같이 봐.	Loca	tion
	mr/hr@	miles: field monitoring reading
	µci/cc @	miles: I-131 field survey
월 이번의 영화	Loca	tion
	mr/hr @	miles: field monitoring reading
	µci/cc @	miles: I-131 field survey
	Loca	tion

5

DAVIS-BESSE NUCLEAR POWER STATION

Attachment 2 Page 1 of 2

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1.2.4

		DAVIS-BESSE N		
		Emergency		
			al Informa (con't)	leion
2012/2017				
Part II:				
Α.			Sector	(s)/Zone(s) are involved
В.		mr/hr @	miles:	whole body dose (pro- jected value)
		mr/hr @	miles:	thyroid dose (projected value)
	NOTE :	the information	and ensur known by t	oove information, reverify re that all assumptions the utility, State and
с.				
	evacuat	:Facility .e/distance)	recommenda	ations (stay inside or
		.,,		
D.			:Weathe	er conditions (precipitation)
Part III:				
Α.				
Α.				
В.	4			
				:Cause of incident
	NOTE :	event, if a spa "N/A" to indica	ace is ski ate that t the inform	mation during an actual pped, insert "W/F" or here has NOT been a mis- ation will be forwarded
		W/F = will fol:	low N/A =	not applicable

Attachment 2 Page 2 of 2

ECC CHECKLIST

### ACTION COMPLETED ACTION REQUIRED DATE INITIALS TIME 1. Emergency Duty Officer 2. Perform applicable steps of the EDO/Shift Supervisor checklist in either EI 1300.03 (Alert), EI 1300.04 (Site), or EI 1300.05 (General) depending on the action level of the event. 3. Assignment of individuals: Log keeper а. b. RMT Offsite Teams C. Dose Assessment Individual(s) d. Control Room Communicator e. NRC Communicator f. State and County Communicator RMT Communicator g. h. Teleprinter Operator 4. Ensure offsite RMT's are sent out in downwind direction for survey per AD 1850.05 Ensure offsite dose estimates are 5. being made per AD 1827.10 6. Assign a C&RT individual for airborne iodine counting and analysis per AD 1850.05.

2

Attachment 3 Page 1 of 2

### ECC CHECKLIST (con't)

### ACTION COMPLETED ACTION REQUIRED DATE INITIALS TIME 7. Evaluate what protective actions should be taken based on AD 1827.12 for the plume exposure pathway and make recommendations to the State and County as necessary. Affected areas should be designated as shown in Attachment 4. 8 Complete the Essential Information form (Attachment 2) and release to the State and County Emergency Operation Centers as needed. 9. Verify that the Shift Supervisor has requested the post accident sampling procedure AD 1850.04 be put in service per the Station Chemist and Health Physicist 10. Ensure total population exposure calculations are made per step 5.7.3(b) of this procedure 11. Coordinate the activities of the following individuals as necessary: Community Assistance Comа. municator b. Corporate Management Communicator Public Relations Comc. municator

Reviewed by\_

3

Filed by

Station Superintendent

Emergency Planning Supervisor

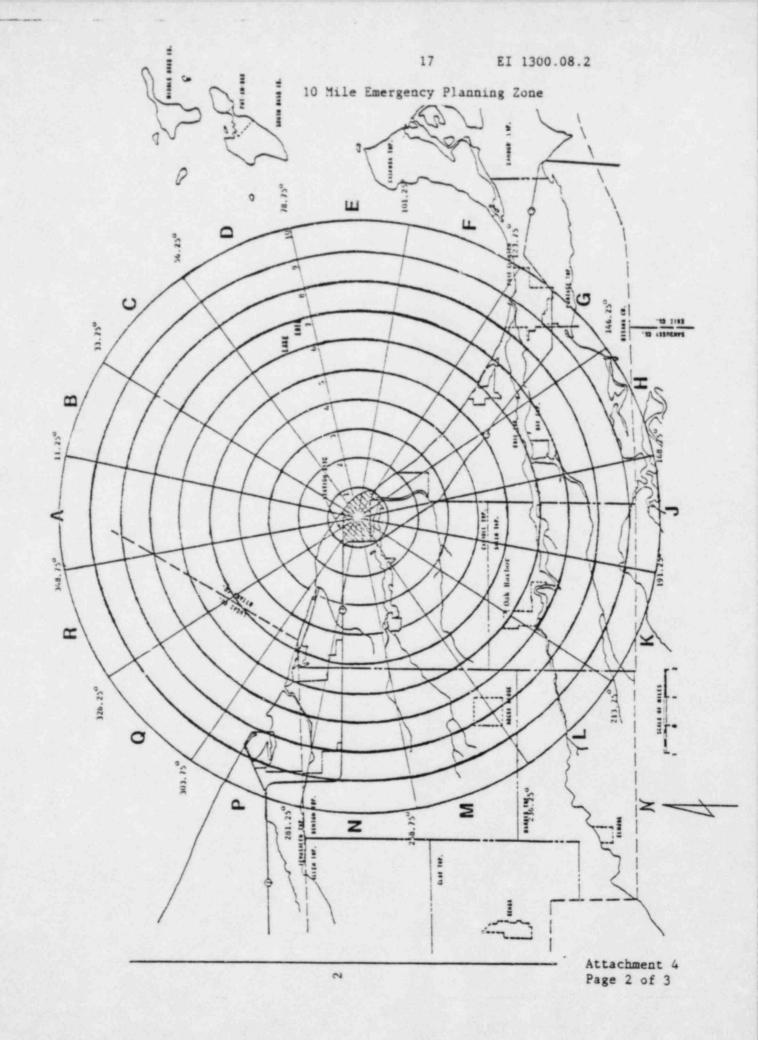
> Attachment 3 Page 2 of 2

Sector Nomanclature		Zone Nomenclature	
Sector in Degrees True	22 1/2°	Miles from	
North from Facility	Sector	Facility	Zone
348.75° to 11.25°	A	0-1	1
11.25° to 33.75°	В	1-2	2
33.75° to 56.25°	C	2-3	3
56.25° to 78.75°	D	3-4	4
78.75° to 101.25°	E	4-5	5
101.25° to 123.75°	F	5-6	6
123.75° to 146.25°	G	6-7	7
146.25° to 168.75°	Н	7-8	8
168.75° to 191.25°	J	8-9	9
191.25° to 213.75°	K	9-10	10
213.75° to 236.25°	L	10-15	15
236.25° to 258.75°	M	15-20	20
258.75° to 281.25°	N	20-25	25
281.25° to 303.75°	P	25-30	30
303.75° to 326.25°	Q	30-35	35
326.25° to 348.75°	R	35-40	40
		40-45	45
		45-50	50

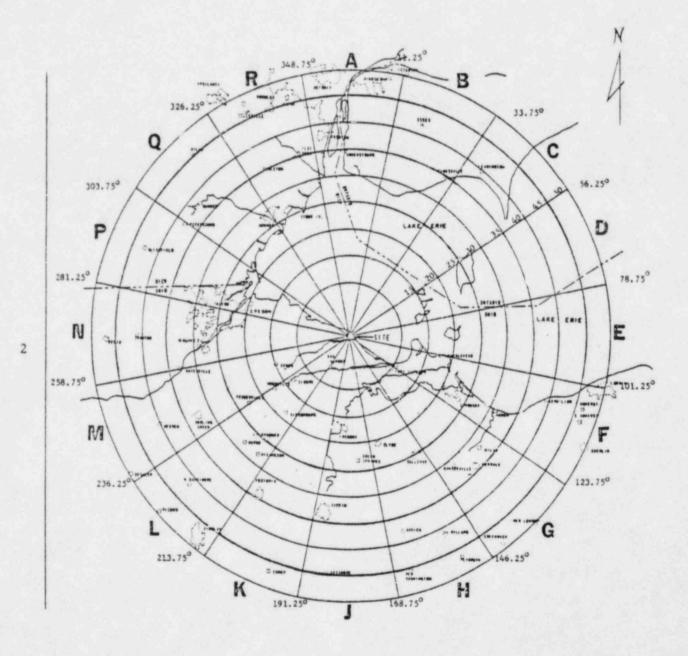
Sector and Zone Designators for Emergency Planning Zones

AREA SEGMENT - An area is identified by a Sector and zone designator.
EXAMPLE - Area F4 is that area which lies between 101.25° to 123.75° true north from the facility and between 3 and 4 miles out from the facility.

Attachment 4 Page 1 of 3



50 Mile Emergency Planning Zone



END

a contract time

Attachment 4 Page 3 of 3

# Davis-Besse Nuclear Power Station

# Unit No. 1

Emergency Plan Implementing Procedure EI 1300.09

Emergency Support Center Activation

...

Record of Approval and Changes

Prepared by	G. J. Reed	5/30/80
		Date
Submitted by	C. E. Wells	6/13/80
	Section Head	Date
Recommended by	BABby	6/13/80
	SRB Chairman	Date
QA Approved	A	
	Quality Assurance Manager	Date
Approved by	Tomura	8/12/80
	Station Superintendent	Date
	$\smile$	

Revision	srb		QA	Sta. Supt.	
No.	Recommendation			Approved	Date
1	flory a	7/4/82	NA	Tomu	7/12/82

## 1. PURPOSE

To outline the activation of the Emergency Support Center (ESC).

1

2. SCOPE

To describe how the steps are taken for response to an emergency from the ESC.

- REFERENCES
  - 3.1 Davis-Besse Nuclear Power Station Emergency Plan
  - 3.2 Davis-Besse Nuclear Power Station Emergency Telephone Directory

3.3	Station Response to Emergencies	EI 1300.00
3.4	Unusual Event	EI 1300.02
3.5	Alert	EI 1300.03
3.6	Site Emergency	EI 1300.04
3.7	General Emergency	EI 1300.05

3.8 TECo Corporate Radiological Emergency Response Procedures

3.9 Public Relations Policy and Procedures Manual

- 4. DEFINITION
  - 4.1 <u>Emergency Support Center</u> (ESC) The TED Edison Plaza Building, Toledo, Ohio is designated as the ESC. Key technical and non-technical groups of the offsite emergency organization can be housed here.

### 5. ACTIONS

- 5.1 The Station Superintendent shall notify the Operations Director that an emergency exists.
- 5.2 Upon being informed of the emergency, the Operations Director shall notify the Emergency Director and the Vice President - Public Relations.
- 5.3 The Operations Director shall make recommendations to the Emergency Director for activation of the necessary portions of the Offsite Emergency Organization.

Those portions of the Offsite Emergency Organization activated will function as per the TECo Corporate Radiological Emergency Response Procedures.

2

- a. To facilitate Corporate emergency response, personnel have been designated a Notification Level number.
  - Level I Directors those personnel necessary for immediate response at the declaration of an Alert, Site, or General Emergency.
  - Level II Directors those personnel necessary at the declaration of a Site or General Emergency.
  - Level III Directors those personnel necessary at the declaration of a General Emergency to assist in a full Corporate response.
- b. Nuclear Support is provided by the Operations Director, who has direct control of the accident management through Station personnel, and the Engineering Support Director (Nuclear Engineering & Construction Director), who is responsible for engineering and recovery planning.
- c. The overall dissemination of information concerning the accident, emergency activities, re-entry, recovery, and on-going Corporate activities will be provided by the Public Relations Mission headed by the Public Relations Director.
- d. The Administrative and Logistics Director will be responsible for providing support in the areas of security, personnel, transportation, procurement, and provisions.
- e. Legal Support is provided by the Legal Director.
- f. Indirect Support is provided by the Finance Director and the Assistant to the Chairman in the form of financial advice and community assistance advice.
- 5.5 Key Areas of the ESC are:
  - a. 7th Floor The Nuclear Engineering & Construction Division (NE&C) is located on the 7th floor of the Edison Plaza. This area includes all engineering departments, as well as the Nuclear Licensing Department. This group will provide engineering support to the Technical Support Center (TSC) and Facility

Engineering Group. A terminal of the Data Acquisition & Display System (DADS) is available in this area to acquire and transmit current data as necessary between facilities.

b. 8th Floor - The eight floor contains the Public Relations area which will function as a center for Public Relations and community assistance efforts.

3

- c. 16th Floor The Planning Center, located on the 16th floor, will serve as the Corporate Management Emergency Response Headquarters. It is equipped with all necessary communications, both radio and telephone, and other necessary emergency planning items.
- 5.6 The Operations Director may direct that one or more of the following telephone communications loops be established as needed per the DBNPS Emergency Plan Telephone Directory:
  - a. Technical Data Loop
  - b. Technical Management Loop
  - c. Policy Management Loop
  - d. Public Relations Loop

5.7 The V.P. Administrative Services - Nuclear or his designee shall coordinate the response activities of the ESC.

### 6. EMERGENCY SUPPORT

1

- 5.1 When activated, the ESC will provide Station support for emergency operations. This support includes, but is NOT limited to:
  - Operational Data (systems operations, set points, procedure writing, etc.)
  - b. Technical Data (equipment specifications, etc.)
  - c. Engineering (in-house, consultants, vendors, etc.)
  - d. Quality Assurance
  - e. Public Relations
  - f. Personnel (operational, clerical, mutual aid personnel, etc.)
  - g. Security

- h. Transportation
- i. Provisions (food, billeting, etc.)
- j. Procurement (parts, equipment, etc.)

4

- k. Administrative services
- 6.2 Requests for offsite support should be transmitted to the responsible TED Department or Mission for action per the TECo Corporate Radiological Emergency Response Procedures.
- 6.3 Refer to the Corporate Radiological Emergency Response Plan for a more detailed description of corporate response and responsibilities.

# Davis-Besse Nuclear Power Station

Unit No. 1

Emergency Plan Implementing Procedure EI 1300.10

Reentry

Record of Approval and Changes

Prepared by	G. J. Reed	5/30/80
		Date
Submitted by	C. E. Wells	6/13/80
	Section Head	Date
Recommended by	Reference	6/13/8
	SRB Chairman	Date
QA Approved	NIA	
	Quality Assurance Manager	Date
Approved by	Tomm	8/18/80
	Station Superintendent	Date

Revision	SRB		QA		Sta. Supt.		
No.	Recommendation	Date	Approved	Date	Approved	Date	
1	Amacing	6/29/82	- NA		Toman	- J	7/8/82

### 1. PURPOSE

To outline a course of action and the protective measures required for reentry into Station areas.

1

2. SCOPE

Describe the actions and responsibilities of Davis-Besse personnel and offsite support groups after the Emergency Duty Officer and the Station Operations Manager have jointly determined and declared the Site or General Emergency situation stable and the Station is ready for reentry phase operations.

REFERENCES

3.1 Davis-Besse Nuclear Power Station Emergency Plan

4. DEFINITION

1

1

1

Not applicable

- 5. REENTRY ACTIVITIES
  - 5.1 Initial Coordination
    - 5.1.1 The TECo Engineering Support Director shall develop, coordinate and expedite plans and schedules for the reentry.
    - 5.1.2 The Company Nuclear Review Board (CNRB) shall oversee the activities of the Engineering Support Director, and the Operations Director, to assure that all nuclear safety aspects of the operations are satisfied.
    - 5.1.3 The Station Operations Manager, under the direction of the Operations Director, shall be responsible at the site for authorizing the start of reentry activities.
    - 5.1.4 Offsite reentry activities will be coordinated with the State and County Disaster Services Agencies.
  - 5.2 Reentry Requirements

The following are actions which shall be considered prior to authorizing reentry.

5.2.1 Assess the need for re-entry and whether the benefits to be gained offset the potential hazards to the re-entry personnel.

5.2.2 Review available radiation surveillance data. Determine areas potentially affected by radiation and/or contamination.

2

- 5.2.3 Review radiation exposures of personnel required to participate in the recovery operations.
- 5.2.4 Determine the need for additional personnel and the source of these additional personnel.
- 5.2.5 Review the adequacy of radiation survey instrumentation and equipment for quantity, type, ranges, and calibration.

# 5.2.6 Pre-plan survey team activities to include:

- a. Areas to be surveyed
- b. Anticipated radiation and contamination levels
- c. Radiation survey equipment required
- d. Shielding requirements and availability
- e. Protective clothing and equipment required
- f. Access control procedures (issuance of new REP's)
- h. Decontamination requirements, and
- i. Communications required.
- 5.2.7 Periodic determination of the estimated total population exposure.

#### 5.3 Reentry Actions

1

The Engineering Support Director and Operations Director shall determine the priority requirements and assure performance of the following activities through coordination with the Station Operations Manager.

- 5.3.1 Determination of the initial required recovery operations (i.e., road blocks, application of locks and safety tags, etc.).
- 5.3.2 Visual observation of hazards or potential hazards associated with the recovery operations.

5.3.3 Comprehensive radiation surveillance of plant facilities and define radiological problem areas.

3

- 5.3.4 Isolate and post areas in the plant with appropriate warning signs and rope barriers, as Radiation Areas, High Radiation Areas, and Contaminated Areas, as appropriate.
- 5.3.5 Establish re-entry teams from personnel available in the Operations Support Center (OSC), Technical Support Center (TSC), or other assembly areas. Re-entry teams shall:
  - a. Consist of at least a team leader and a communicator.
  - b. Be briefed on the plan of action.

- c. Be authorized emergency exposure limits as necessary and be advised to frequently check direct-reading dosimeters and withdraw to a safe area if assigned exposure limits are approached.
- d. Be qualified for first aid, plant operations, health physics, and/or maintenance evaluation and corrective action as necessary for the specific re-entry evolution.
- e. Be equipped with, or have available, appropriate emergency equipment and protection devices. Such equipment shall be tested for operability prior to re-entry.
- 5.3.6 Direct re-entry personnel to withdraw to a safe area if severe unanticipated or unplanned conditions are encountered, pending further evaluation of the re-entry effort.
- 5.3.7 Ensure that re-entry teams maintain continuous communication and a continuous status of progress is maintained.
- 5.3.8 Coordinate the return of the re-entry teams.
  - Ensure necessary monitoring, decontaminations, and/or first aid is performed as per appropriate procedures.
  - b. Debrief team members.

- c. Report results and status of re-entry teams.
- 5.3.9 Determine the need for additional re-entries and for initiation of recovery operations per EI 1300.11 Recovery.

4

### FINAL CONDITIONS

1

6.

- 6.1 Re-entry operations have been completed and all re-entry team members have been accounted for.
- 6.2 Debriefing of re-entry personnel has been completed and documented.

# Davis-Besse Nuclear Power Station

# Unit No. 1

Emergency Plan Implementing Procedure EI 1300.11

Recovery

Record of Approval and Changes

Prepared by	G. J. Reed	5/30/80
		Date
Submitted by	C. E. Wells	6/13/80
	Section Head	Date
Recommended by_	- Colle in	6/13/80
	SRB Chairman	Date
QA Approved	NA	
	Quality Assurance Manager	Date
Approved by	Tomman	81-0180
	Station Superintendent	Date

No.	SRB Recommendation	Date	QA Approved	Date	Sta. Supt. Approved	Date
1	stephen m 2	- 7/2	7/82NA		Tomu	J =/s/82

#### 1. PURPOSE

To outline the course of action for placing the plant in an anticipated recovery condition following a plant event which required activation of the Station Emergency Plan.

1

2. SCOPE

1

1

Describes the actions and responsibilities of Davis-Besse and offsite support groups in activities after the Station Operations Manager and Emergency Duty Officer have jointly declared that the emergency situation is stable and the Station is ready to enter recovery phase activities.

- 2.1 The actual magnitude of event recovery will dictate the extent of personnel involvement in the recovery operation.
  - 2.1.1 For events of a minor nature, the normal on-shift organization should be adequate to perform necessary recovery actions (i.e. for Unusual Event classifications).
  - 2.1.2 For events involving significant damage to plant systems required to maintain operation of the plant, the on-site emergency organization should be adequate to coordinate the necessary recovery actions (i.e. for Alert classifications.)
  - 2.1.3 For events involving damage to plant systems required to maintain safe shutdown of the reactor the off-site emergency organization should be adequate to manage the necessary recover actions (i.e. for Site or General Emergency classifications).
- 2.2 The Station Operations Manager, under the direction of the Operations Director, shall be responsible at the site for authorizing the start of reentry, recovery, and restoration activities; and the return to normal operations.
- 3. REFERENCES
  - 3.1 Davis-Besse Nuclear Power Station Emergency Plan
- 4. DEFINITION
  - 4.1 <u>Recovery Actions</u> Those actions taken after an emergency to restore the Station as nearly as possible to preemergency conditions.

- 5. RECOVERY PROCESS
  - 5.1 In tial Conditions
    - 5.1.1 Plant conditions are abnormal, but appear stabilized following an event requiring activation of the Emergency Plan.

2

- a. The plant is in a shutdown condition with adequate core cooling.
- b. In-plant radiation levels are stable and decreasing with time.
- c. The release of radioactive material to the environment is controlled and there is no significant potential for additional uncontrolled releases.
- d. Fire, flooding, or similar emergencies are under control.
- 5.2 Recovery Requirements
  - 5.2.1 Reentry activities have been completed as required by the Reentry Procedure, EI 1300.10.
  - 5.2.2 Plant and TECo personnel have been assigned activities under the direction of the Emergency Duty Officer through approval of the Recovery Director and Operations Director.
  - 5.2.3 Special team members are NOT designated prior to the initiation of this procedure but should be selected from available personnel based on experience and training.
- 5.3 Recovery Considerations

- 5.3.1 Particular attention shall be directed towards isolating components and systems as required to control or minimize the hazards.
- 5.3.2 A systematic investigation shall be conducted to determine the equipment that has been damaged and the extent of the damage.
- 5.3.3 A detailed investigation of the accident causes

and consequences both to the plant and the environment shall be conducted.

3

- 5.3.4 Determinations shall be made as to the repair work required to perform necessary modifications to plant equipment and/or operating procedures.
- 5.3.5 Repair work and approved modifications shall be carried out as required by existing or prepared procedures.
- 5.4 Radiological Considerations
  - 5.4.1 Normal limits of occupational exposure shall be applied during recovery since no emergency is considered to exist.
  - 5.4.2 Compliance with the limits shall be the responsibility of the Recovery Director through the Chemist and Health Physicist.
  - 5.4.3 Recovery operations that may result in the release of radioactive materials shall be evaluated by the Recovery Director and his staff as far in advance as possible.

#### 5.5 Procedure

- 5.5.1 The Shift Supervisor shall direct any necessary recovery actions that are minor in nature (i.e., through normal maintenance work requests).
  - Repair work and approved procedure modifications shall be carried out as required by existing procedures.
  - b. Reports on the cause and reparation of the event shall be made as required by existing station or regulatory procedures (i.e., licensee event report or deviation report, etc.)
- 5.5.2 If the event involves significant damage to plant systems, the responsibility for recovery actions should be shifted to the TSC.
  - a. The Station Superintendent, Outage Management becomes the Recovery Manager and recovery actions involving significant plant repair, including:

 Re-entry into affected areas of the plant as per EI 1300.10.

4

- Modifying plant equipment and/or operating procedures.
- Initiating appropriate system tests to verify the plant's capability to return to service.
- b. All emergency procedures shall be closed out or have an individual assigned to them for completion and closure.
- c. All activated emergency response or support organizations shall be notified in recovery situation and subsequently of its termination.
- 5.5.3 If the event involves damage to plant systems impairing the ability to maintain safe shutdown for protection of the public, recovery responsibility should be shifted to the EOF.
  - a. The Recovery Manager under the authority of the Engineering Support Director, shall develop, coordinate, and expedite plans and schedules for recovery operation.
  - b. A long-term recovery organization shall be established to coordinate all recovery operations.
  - c. A detailed investigation of the accident cause and consequences both of the plant and the environment will be conducted.
  - d. Any discharges will be controlled as per plant or regulatory limits.
  - e. Special procedures for decontamination and repair, installation and operation of backup systems, inspections and tests necessary to assure plant integrity and the adequate repairs, waste handling and processing, and ALARA considerations will be developed and implemented.

NOTE: As necessary, a technical review group will be identified in the development of the recovery organization, as well as the individual(s) having

### EI 1300.11.1

final signature authority on all procedures.

f. Process and administer any additional support services for personnel, legal counseling, and special funding requirements.

5

- g. Any procedural waivers granted during the emergency phase shall be either terminated or documented through appropriate procedural modifications.
- h. To the extent possible, applicable limiting conditions for operation and surveillance requirements of the plant Technical Specifications shall be complied with.

NOTE :

- For those conditions and surveillances in which compliance is impractical, the NRC shall be informed and consulted with regarding safety implications of continued operation in that mode.
- i. Applicable off-site agencies shall be notified of recovery organization and activity changes and subsequently of its termination.
- j. Any necessary restoration activities shall be implemented to prepare for resumption of full power operating, including:
  - Disposal of all waste generated during the emergency and recovery phases.
  - Elimination of potential effects of the emergency on future plant operations.
  - Training of plant operations, Shift Technical Advisors, and other applicable individuals on changes that occurred to the plant during the emergency outage.
  - Replenishment of any emergency equipment or consumable materials.
- k. If recovery and restoration efforts cannot restore the plant to an operable status, a

# 6 EI 1300.11.1

.

decommissioning organization shall be established to shutdown the plant to a safe long-term condition.

- 5.6 Final Conditions
  - 5.6.1 A recovery organization has restored the plant to its pre-emergency status, to a modified pre-emergency status capable of power operations, or to a decommissioning status.

ISTRIBUTION Original, Responsible Section Head Action File Copy, Master File COPIES TO BE MODIFIED FOR IMMEDIATE IMPLEMENTATION Shipt Superio'sono/ Control Room DAVIS-BESSE NUCLEAR POWER STATION - UNIT 1 TEMPORARY MODIFICATION REQUEST Planning Emirieney ED 6926 SECTION 1 PROCEDURE TITLE AND NUMBER EMERCENCY PLAN Implementing El 1300.12 ) Add New Medical Equipment CABINET CONTENTS located in PPF 2) Provide better organization to first AID Equipment 11.5.1 Emergency MEDICAL Equipment CABINEts ARE CHANGE located: (1) on 623' level Turbine Building CAFETERIA, (2) IN the PERSONNEL PRODESING FACILITY, and (3) Lobby of Administration Billy 11.5.2 CABINEE 1 623' LEVEL TURBINE BUILDING contents ARE identified on Attachment #1 11.5.3 Cabivet a PERSONNEL Processing FACILITY Contents are identified on Attachment # 2. 11.5.4 CALINET 3 Administration Building Contents ARE identified on Attachment #3. ON ATTACHED (CONT) SHEETS IS PROCEDURE REVISION REQUIRED Yes X If no, this modification is valid until No PREPARED BY DATE DATE APPROVED BY DATE APPROVED BY DATE SUBMITTED BY Section Head 52 fudit DATE RECOMMENDED BY (SRB Chairman) 10/11/82 Im-DATE QA APPROVED BY (Manager of Quality Assurance) DATE APPROVED BY (Station Superintendent) 10/1/82 TO minay 1 Sma

T.6820 EI1300 12

11.5.5 MEDICAL TREATMENT BOOM 603' LEVEL CONTENTS ARE IDENTIFIED ON ATTACHMENT 4.

- 11.5.6 FIRST AID KIT CONTENTS ARE IDENTIFIED ON ATTACHMENT #5.
- 11.5.7 FIRST AID EQUIPMENT IS INVENTORIED AND MAINTAINED IN ACCORDANCE WITH AD1810.02.

76820

623' LEVEL TURBINE BUILDING EI 1300.12.2 CHBINET 1: EMERGENCY MEDICAL EQUIPMENT CABINET CONTENTS CABINET CONTENTS (623' Level Bldg.) ATTACHDENT-5 (Robertshaw) Demand valve resuscitator and aspirator unit (Robert Shaw) Adult Hope II resuscitator 0'2 double sphere unit Full length backboard Short Backboard Hare traction leg splint Stretcher Shove1 Axe CPR board Hot stick Bolt cutters Crowbar Thermal gloves Sterile water (pint bag) Grange trauma kit First aid case-Sky Geni Decent Device (100' nylon line) 12 feat NyLON ANCHORING INES (2) RESCUE beits with locking RINES (2) OVAL LOCKING RINGS Full body HARDESS SAFETY BELL, ONE D-RING Stretcher basket Brille Lanyardo (2) First Aid Case 1- TOWER 2 - Blankets 4-paper sheet - not sterile 1- cloth sheet - not sterile 10 - wood splints 1- med. cervical cella 1-ly cervicel collar 1-38×10" Trauma Die 3- 36×99" burn sl ecto ATTACHMENT 1 PAGE 10F2 (continued)

1.6820

10 Emericancy MEDical Equipment Cabinet 623' Turbine Blog CABINET 1: IN KUT CONTENTS (CONT) OR HOE TRHI

# ORANGE TRAUMA Kit

Upper Trays

2-Thermometers, oral & rectal 24-Sml. alcohol prep pads 5-sterile cotton tip applicators 6-lemon glycerin swabs 5-oval eye pads 1-eye irrigation solution 1-rescue blanket 56x86" 1-surgical sissors-Lg 1-pr sissors-clamp 1-pr various tweezers 1-sm child lifesaver tube 1-adult lifesaver tube 6-diagnostic flashlights 1-box (10) ammonia inhalents 1-box (10) soap swabs 100-bandaids

#### Upper Compartment

1-Poison antidote kit 9-5x9" abdominal pads 10-4x4 dressing sponges 1-flashlight 1-Saunders snakebite kit 1-jaw spreader 1-2" adhesive tape roll 1-1" adhesive tape roll 1-ring cutter 1-blood pressure cuff 1-stethoscope 3-sml ice paks 2-lg. ice paks 1-roll 4" gauze bandage 1-roll 3" gauze bandage 1-roll 2" gauze bandage 2-rolls 1" gauze bandage 1-roll 6" elastic bandage 1-roll 4" elastic bandage 1-roll 2" elastic bandage 2-1/2" roll adhesive tape 4-4" bandage compress 3-3" gauze compress 3-3" gauze compress 3-8x10 gauze pads 2-5x9 gauze pads 2-eye dressing packets 25-plastic finger tip bandages 10-oval coverlets, bandaids

### Bottom Compartment

1-burn & trauma dressing 18x24"-arm 1-burn & trauma dressing 24x31"-leg 1-disposal blanket 1-set of body binders 1-cervical collar-lg 1-trauma dressing 30x10"-Dyna Med 1-sterile burn sheet 66x99-Dyna Med 1-4 1/2x6" self adhesive gauze 1-full leg air splint 1-1/2 leg air splint 1-foot/ankle air splint 1-foot/ankle air splint 1-full air air splint 1-hand/wrist air splint Finst Aio MANUAL for Chemical Hagands

(Located 623' Turbine Building Cabinot)

ATTALHMENT 1 PAGE 20F2

1.68 4

CABINET 2 . PERSONNEL PROCESSING FACILITY Emergency medical equipment channet contents \*\*\*\*

Emergency Medical Equipment located in the Personnel Processing Facility.

11

+3

# Life Flight Equipment

4 pylons 8 flares 2 smoke flares

Resuscitator

Robertshaw Demand Valve Reuscitator, inhalator & aspirator unit RESPONDER Kit First Aid Beg Top Compartment 10-4x4" Dressings 1-Ringcoutter 1- 1/2" tape 1- 2" tape 1- Thermometer 6- Penlights 10- Ammonia Inhalants 2- Triangular Bandages 2- 2x5 yd bandage 2- 3x5 yd bandage 2- 4x5 yd bandage Bottom Compartment 1- Blood Pressure Cuff 1- 10"x30" Dressing 1- 2" - Elastic Bandage 1- 3" Elastic Bandage 3- 3" Unsterile Bandages 3- 4" Unsterile Bandages 100- 1" Bandaids 6- airways 10- cleansing wipes 2- 4ydx3" Bandage 2- Ice Packs 1- forceps 1- shears 1- 7 1/4" scissors 1- Stethoscope 1- Blanket 1- Rebreather Mask

T.6820 21 1300.12

CADINET 3: ADMINISTRATION OFFICE Building Emergency medical Equipment CABINET - LObby

Alterton Laterty

2- 50x90 blankets (60% wool, 40% acrylic) 2- D Cytinder O2 bottles 1- Pediatric Resusitator-Hope 11 1- Dyna-Med Hare Traction Splint 1- Long Back Board with 2 Straps 1- Short Back Board with 2 straps, head & chin strap & wrist restr. 2- 48" Splint boards 2- 36" Splint boards 2- 14" Splint boards 1- Roehampton Burns Dressing Kit includes: 2 arm 18x24 2 leg 24x31 1 body 24x54 1 12"x12" 1 12"x 6" 1- bottle of York Isopropyl Alcohol Rubbing Compound 1- bottle of B&Y all purpose lotion 1-sube of Griffith Cintment-releaves itching 1- bottle of Dixon-Fuffered Aspirin-100-1- bottle of York Aspirin-100 50 bandaids 50-butterfly bandaids Blue Thomas ist

> ATTACHMENT 3 PAGE 10× 2

T 60 20 EI 1300 12

CABINET 3: Administration office Building Emergency medical Equipment Cabinet contents (conit)

Blue Trauma Bottom Co	Kit ompartment			
1-Burn 1-Disp 1-Cerv 1-Cerv 1-Ster 1-Box Ful 1-Box 1-Jaw 1-Silv 1-Ster	A Trauma Dressing 18x2 A & Trauma Dressing 24x3 Dosable Blanket Fical Collar-Lg File Burn Sheet 60x99"/d of 6 air splints A leg, 1/2 leg, foot/ar of 6 oral airways-vario spreader For Swaddler (infant bla thoscope Foid Sphygmomanometer	iisposable kle,full arm, bus sizes	1/2 arm, hand/wrist	
3- 5x9 2- 10' 1- Tra 1- Sau 2- 3" 2- 2 1- Tul 1- Tul 1- Rin 1- Si 1- 7 1- Eco 1- 3" 1- 6" 1- 1/ 1- 1"	mpartment 9" abdominal pads "x2.5' Trauma Dressing acheal Suction Catheter unders snakebite kit guaze wraps (not steril 1/2" guaze wraps (not st bilical Cord Clamps be of Johnson's First A. ng Cutter 1/2" Kelly Forceps 1/4 " sissors ono-shears Dyna Flex Bandage Dyna Flex Bandage 2" roll adhesive tape roll adhesive tape	l- l- 2- terile)	Topper Sponges 4"x4" ( Fracture Strap Kit Wrist Restraints Kerlix Rolls (sterile)	
12- Al 1- Ey 6- Pe	ays ubby Thermometer cohol Prep Pads e Irrigation Solution nlights x (10) Ammonia Inhalent	4- Oval ey 6- Kwick H 2- Triang	Kold Paks (ice) le Bandages stomull	

ATTACHMENT 3 PAGE 20F2

T.6920

14

EI 1300.12.0

MED	ICAL	TREAT	<b>TENT</b>	ROOM
	EQUI	IPMENT	LIS	1
	-	HOID DI		-
		HIOTE LDI		

		-	
	Equipment Type	Quantity	Location
1.	Surgical Sutures (4-0) Cuticular 662G	1 Box (12)	Cabinet 1
2.	Surgical Sutures (000) Cuticular H 882G	1 Box (12)	Cabinet 1
3.	Reflex Hammer	1 ea.	Cabinet 1
4.	Straight Safety Razor	1 ea.	Cabinet 1
5.	Hair Clippers	1 set	Cabinet 1
6.	2" Adhesive Tape	3 rolls	Cabinet 1
7.	1/2" Adhesive Tape	6 rolls	Cabinet 1
8.	1" Adhesive Tape	5 rolls	Cabinet 1
9.	Scissors	1 pair	Cabinet 1
10.	Finger Ring Cutter	1 ea.	Cabinet 1
11.	4" Elastic Wrap	7 rolls	Cabinet 1
12.	2" Elastic Wrap	7 rolls	Cabinet 1
13.	Disposable Syringes	96 ea.	Cabinet 1
14.	AMBU Resusitator	1 ea.	Cabinet 1
15.	Arm Splint	1 ea.	Cabinet 1
16.	Otoscope	1 ea.	Cabinet 2
17.	Sphygmonanometer	1 ea.	Cabinet 2
18.	Illuminator for Disposable Laryngoscope	1 ea.	Cabinet 2
19.	Small size curved Disposable Laryngo-		
	scope	10 ea.	Cabinet 2
20.	Large size curved Disposable Laryngo-		
20.	scope	10 ea.	Cabinet 2
21.	Flashlight	1 ea.	Cabinet 2
22.	19 Gage Scalp and Small Vein Set	2 sets	Cabinet 2
23.		2 sets	Cabinet 2
24.	Intravenous Injection Set	2 sets	Cabinet 2
25.	Martin Laryngectomy Tube, Size 8	1 ea.	Cabinet 2
26.	Martin Laryngectomy Tube, Size 10	1 ea.	Cabinet 2
27.	2 BU, Trachex Tube	1 ea.	Cabinet 2
28.		1 ea.	Cabinet 2
29.	Sterile Cotton Tipped Applicator	24 ea.	Cabinet 2
30.	Sterile Tongue Depressor	33 ea.	Cabinet 2
31.	Rubbing Alcohol	1 bottle	Cabinet 2
32.	Eye Wash Irrigator	2 bottles	Cabinet 2
33.	Tincture Benzoin	2 bottles	Cabinet 2
34.	Extra Large Bandaids	1 box	Cabinet 2
35.	Plastic Kidney Tray	2 ea.	Cabinet 2
36.	Combine Dressing	1 box	Cabinet 2
37.	Finger Splint Tape	1 roll	Cabinet 2
38.	Triangular Bandage	1 ea.	Cabinet 2
39.	Bandaids	1 box	Cabinet 2
40.	Velcro Tourniquet	1 ea.	Cabinet 2
41.	Oval Eye Pads	1 box	Cabinet 2
42.	2" x 2" Gauze Pads	1 box	Cabinet 2
43.	4" x 4" Gauze Pads	1 box	Cabinet 2
44.	Minor Laceration Pads with Instruments	4 sets	Table 2/Drawer 2

ATTACHMENT 4 PAGE ICF2

15 T 61 Lo 12 EI 1300.12.2

# MEDICAL TREATMENT ROOM EQUIPMENT LIST

		Equipment Type	4	uantity	Teachier	
	1-		-	admercy	Location	
	45.	Sterile Tracheotomy Care Set Basic Suction Kit		1 set	Table 2/Drawer	3
	47.	Napkins		2 kits	Table 2/Drawer	3
	48.	Buckhous Towel Clamp			Table 2/Drawer	4
	49.	Surgical Razor Holder		4 ea.	Table 2/Drawer	1
	50.	Razors		1 ea.	Table 2/Drawer	i
	51.	Large Tweezers	1.	2 ea.	Table 2/Drawer	1
	52.	Small Tweezers		l ea.	Table 2/Drawer	1
	53.	Pick		l ea.	Table 2/Drawer	î
	54.	Tissue Forceps		l ea.	Table 2/Drawer	1
	55.	Large Towel Clamp		ea.	Table 2/Drawer	1
	56.	Surgical Shears	1	ea.	Table 2/Drawer	î
	57.	Kelly Murphy	4	pairs	Table 2/Drawer	î
	58.	Rectal Thermometer	1	ea.	Table 2/Drawer	1
	59.	Oral Thermometer	1	ea.	Table 2/Drawer	1
	60.	Thermometer Holder	5	ea.	Table 2/Drawer	1
	61.	Towels	2	ea.	Table 2/Drawer	1
-	62.	Examination Clothes	2	ea.	Table 2/Drawer (	6
	63.	REMS Medical Kit		sets	Table 2/Drawer (	-
	64.	Surgical Gloves		kits	Table 2/Drawer	2
		Services Groves		pairs	Table 1/Drawer 2	2

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ATTA CHMENT H PAGE 20F2

16 10 EI 1300.12.2

T.6120

FIRST AID KIT CONTENTS

Elastoplast Knuckle Converlets

Form-Cut Fingertip Bandages

1" Adhesive Bandaids

3" x 3" Sterile Gauze Pads

1/2" Adhesive Tape

1" Adhesive Tape

Merthiolate Swabs

Triangular Bandages

Eye Dressing Kits

2" Compress Bandages

4" Compress Bandages

2" Gauze Bandage

4" Gauze Bandage

Antiseptic Soap Swabs

Sting Kill

First Aid Cream

Poison Ivy Solution

Tweezers

Eye Cup

2 Eye Wash Solution

Tourniquet, Forceps + Scissors

ATTACHMENT 5 PAGE ICFI

### Davis-Besse Nuclear Power Station

Unit No. 1

- -\*

Emergency Plan Implementing Procedure EI 1300.12

Administrative Controls

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Record of Approval and Changes

Prepared by	G. J. Reed	5/30/80
		Date
Submitted by	C. E. Wells	6/13/80
	Section Head	Date
Recommended by_	BaBuy	4/13/80
	SRB Chairman	Date
QA Approved	NA	
	Quality Assurance Manager	Date
Approved by	70 minar	8/10/80
	Station Superintendent	Date

Revisio	n SRB		QA	Sta. S	Supt.
No.	Recommendation	Date	Approved	Date Appro	ved Date
1	allesign-	1/21/81	NA	TOMan	ay 6735 181
	Amaring			Den	oved Date 1/21/81 2/8785 9/2/82

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### 1. PURPOSE

To implement the administrative requirements of the DBNPS Emergency Plan.

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2. SCOPE

To outline the administrative requirements for maintaining the readiness of the Emergency Plan and Emergency Plan Implementing Procedures (EI 1300 series).

DEFINITION

Not Applicable

- 4. REFERENCES
  - 4.1 The Davis-Besse Nuclear Power Station Emergency Plan
  - 4.2 Station Operations AD 1839.00
  - 4.3 TED Corporate Radiological Emergency Response Procedures
    - 4.4 Emergency Control Center Activation, EI 1300.08
    - 4.5 Emergency Supply Checklists, PT 5199.14
    - 4.6 Fire Protection/Safety for Buildings Outside the Protected Area, AD 1810.02
    - 4.7 Technical Support Center Activation, EI 1300.07
    - 4.8 Operations Support Center Activation, EI 1300.06
    - 4.9 Station Records Management, AD 1848.00
    - 4.10 Control of Conditions Adverse to Quality, AD 1807.00
    - 4.11 Reports Management, AD 1804.00
    - 4.12 Records Retention Requirements, AD 1848.17
    - 4.13 Public Relations Policy and Procedures Manual
    - 4.14 Emergency Call System, AD 1827.17
    - 4.15 Personnel Training Program, AD 1828.00

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- 5. EMERGENCY DUTY OFFICER AND OTHER KEY EMERGENCY RESPONSE PERSONNEL (Administrative Non-Emergency Duties)
  - 5.1 The Emergency Duty Officer shall be a member of the Nuclear Mission. A current list of personnel designated as Emergency Duty Officers will be maintained in the Control Room and the Station Superintendent's office.
    - 5.1.1 Assignment periods are weekly commencing at 0800 Monday and ending at 0800 the following Monday.

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- 5.1.2 If the assigned EDO will NOT be available (cannot be reached by pager), it is his responsibility to ensure that another EDO assumes his duties.
- 5.1.3 While on duty, the EDO will either carry a "beeper" pager and remain within a 25 mile radius of either ACME or Lindsey, or leave a locating number with the Shift Supervisor's Office. The EDO should be capable of responding to any problem in 60 minutes or less.
- 5.2 The Key Emergency Response Personnel are those Toledo Edison Company individuals that are contacted on the first wave of notifications (following the Station Superintendent) after an emergency condition has been declared at the Davis-Besse Station.
  - a. The following personnel have been designated Key Emergency Response Personnel:
    - 1. Assistant Station Superintendent, Operations
    - 2. Chemist and Health Physicist
    - 3. Emergency Duty Officer

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- 4. Emergency Planning Supervisor
- 5. Nuclear Services Director
- 6. News Media Relations Supervisor
- 7. Nuclear Security Manager
- Technical Engineer
   Maintenance Engineer
- 10. Operations Engineer
- b. Other than the EDO who shall perform his duties in accordance with Step 5.1 above, the Key Emergency Response Personnel should follow the below listed directives:

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 If an assigned person will NOT be available (cannot be reached by pager), it is his responsibility to ensure that another qualified individual assumes his duties.

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 These personnel are also responsible for additional notifications per AD 1827.17, Emergency Call System in order to provide for adequate response of appropriate personnel.

#### 6. PERSONNEL RELIEFS DURING EXTENDED EMERGENCIES

- 6.1 Should it become necessary during the course of an emergency to have personnel relieved of their emergency functions, the relieving personnel should come from off shift personnel NOT already involved with emergency actions.
- 6.2 Reliefs should take place during a period when conditions will allow a smooth transition between relieved and relieving personnel.
- 6.3 Relief scheduling will be accomplished as directed by the Station Operations Manager.
- 6.4 Reliefs shall be conducted in a controlled manner as conditions permit.
  - a. The essential information form, or the appropriate EI checklist should be reviewed prior to turnover.
  - b. When facility Managers change, they must verbally announce it so that all personnel in the facility are aware of the change.
  - c. All status boards must be up-to-date prior to releasing personnel.
  - All turnovers are logged in the appropriate facility log books.

#### ENTRY CONTROL DURING AN EMERGENCY

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7.1 Support group personnel reporting to the Station during an emergency assemble at the Radiological Testing Laboratory (RTL) located on the first floor at the north end of the Administration Building.

- 7.2 Personnel assigned to enter the Station site will pass through a guarded gate.
- 7.3 Authorized entry to the Station during an emergency will be determined by:
  - a. Any Station employee normally authorized nonescorted access will be admitted upon verbal communications from the employee to security personnel that the employee was directed to enter the Station, or

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- b. Written direction from the Station Operations Manager (or designee thereof) to security personnel to admit a person NOT normally granted nonescorted access with an escort, or
- c. Verbal communications from the Shift Supervisor, or the EDO to admit a person NOT normally granted nonescorted access for emergency response purposes. Such visitors must be escorted by security or Station personnel at all times while on the site.

#### 8. RECORDS OF DRILLS

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- 8.1 The Emergency Planning Supervisor is responsible for collecting and reviewing all records concerning Emergency Plan drills and exercises.
- 8.2 Records shall include:
  - a. Drill and exercise scenario's
  - b. Personnel participating and observing by name, title, location, and function during the drill or exercise
  - c. Comments and recommendations resulting from the critique of the drill or exercise
  - d. Documentation of deficiencies and the proposed corrective actions
  - e. Documentation of the completion of corrective actions.

#### 9. REIEASE OF PUBLIC INFORMATION

9.1 It is considered important that factual information be supplied promptly to the public in the event of a Station emergency. Release of information will be coordinated by the Toledo Edison Vice President - Public Relations according to the TED Public Relations Policy and Procedures Manual.

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9.2 The Public Relations Department will dispatch at least one representative to remain at the site, in the ECC or onsite Public Relations Center, for the duration of any Station emergency.

9.3 The Energy Education Center (EEC) is located on the nonrestricted side of the Administration Building first floor. This area provides a radiologically and structurally protected location for press gatherings, and briefings. Equipment is available to support timely communications and information dissemination on plant conditions and emergency operations.

#### 10. GUIDANCE TO DOCUMENT HOLDERS OUTSIDE TED

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Comments and recommendations concerning the DBNPS Emergency Plan and Implementing Procedures should be made in writing to the Emerger.cy Planning Supervisor.

10.1.1 Comments should be mailed to:

Toledo Edison Company Emergency Planning Supervisor 300 Madison Avenue Toledo, OH 43652

- 10.1.2 The Emergency Planning Supervisor will then incorporate appropriate comments in accordance with existing administrative procedures.
- 10.2 The Emergency Planning Supervisor shall update and reissue all necessary Letters of Agreement and Mutual Aid Agreements on an annual basis.
- 10.3 The Emergency Planning Supervisor is responsible for the distribution and maintenance of the DBNPS Emergency Plan Telephone Directory.
- 11. EMERGENCY EQUIPMENT
  - 11.1 Emergency Control Center
    - 11.1.1 The emergency equipment located within the ECC is identified in Attachment 1 to EI 1300.08, Emergency Control Center Activation.

11.1.2 The emergency equipment is inventoried and maintained in accordance with PT 5199.14, Emergency Supply Checklists.

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- 11.1.3 Fire protection and detection equipment located within the ECC is maintained and tested in accordance
  with AD 1810.02, Fire Protection/Safety for Build-ings Outside the Protected Area.
- 11.2 Technical Support Center
  - 11.2.1 Emergency equipment for use in the TSC is identified in Attachment 1 to EI 1300.07, Technical Support Center Activation.
  - 11.2.2 The emergency equipment is inventoried and maintained in accordance with PT 5199.14, Emergency Supply Checklists.
- 11.3 Operations Support Center
  - 11.3.1 Emergency equipment for use in the OSC is identified in Attachment 1 to EI 1300.06, Operations Support Center Activation.
  - 11.3.2 The emergency equipment is inventoried and maintained in accordance with PT 5199.14, Emergency Supply Checklist.
- 11.4 Radiological Testing Laboratory
  - 11.4.1 The emergency equipment located within the RTL is identified in Attachment 1 to EI 1300.08, Emergency Control Center Activation.
  - 11.4.2 The emergency equipment is inventoried and maintained in accordance with PT 5199.14, Emergency Supply Checklists.
  - 11.4.3 Fire protection and detection equipment located within the RTL is maintained and tested in accordance with AD 1810.02 Fire Protection/ Safety for Buildings Outside the Protected Area.
- 11.5 First Aid Equipment
  - 11.5.1 The orange trauma kit contents are identified in Attachment 1.

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- 11.5.2 The first aid kit contents are identified in Attachment 2.
- 11.5.3 First aid equipment located within the Medical Treatment Room is identified in Attachment 3.
- 11.5.4 First aid case contents located in the Emergency Medical Equipment Cabinets, 623' level, Turbine Building, are identified in Attachment 4.
- 11.5.5 Emergency medical equipment cabinets contents, 623' level, Turbine Building are identified in Attachment 5.
- 11.5.6 First aid equipment is inventoried and maintained in accordance with PT 5199.14, Emergency Supply Checklists.

11.6 Fire Equipment

11.6.1 Fire equipment is idencified, maintained, and tested in accordance with AD 1810.02, Fire Protection/Safety for Buildings Outside the Protected Area.

#### 12. EMERGENCY RECORDS

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- 12.1 Each Emergency Response Center (TSC, ECC, OSC, ESC) shall maintain a chronological log of the activities of the center. This log shall be maintained under the direction of the individual responsible for directing the centers activities. Entries should include notations of plant status, directions given or received, recommendations made to outside organizations, etc.
- 12.2 Each communicator shall maintain a record of all communications received or transmitted. These entries may be summaries of conversations, however, data reports and directives should be as specific as possible.
- 12.3 Records of emergencies shall be maintained and disposed of in accordance with Station Records Management, AD 1848.00 and Record Retention Requirements, AD 1848.17.

#### 13. TRAINING

13.1 Training on the Davis-Besse Emergency Plan and Emergency Plan Implementing Procedures should be a coordinated effort between the Emergency Planning Group and the Nuclear Training Department.

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13.2 Actual training requirements are outlined in Section 8 of the Davis-Besse Emergency Plan.

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13.3 Special case training situations (e.g., news media personnel, the general public, etc.) will be handled by various departments within TED as coordinated by the Emergency Planning Group.

#### ORANGE TRAUMA KIT CONTENTS ATTACHMENT 1

#### Upper Trays

2-Thermometers, oral & rectal 24-Sml. alcohol prep pads 5-sterile cotton tip applicators 6-lemon glycerin swabs 5-oval eye pads 1-eye irrigation solution 1-rescue blanket 56x86" 1-surgical sissors-Lg 1-pr sissors-clamp 1-pr various tweezers 1-sm child lifesaver tube 1-adult lifesaver tube 6-diagnostic flashlights 1-box (10) ammonia inhalents 1-box (10) soap swabs 100-bandaids

#### Upper Compartment

1-Poison antidote kit 9-5x9" abdominal pads 10-4x4 dressing sponges 1-flashlight 1-Saunders snakebite kit 1-jaw spreader 1-2" adhesive tape roll 1-1" adhesive tape roll 1-ring cutter 1-blood pressure cuff 1-stethoscope 3-sml ice paks 2-1g. ice paks

```
1-roll 4" gauze bandage
 1-roll 3" gauze bandage
  1-roll 2" gauze bandage
   2-rolls 1" gauze bandage
1-roll 6" elastic bandage
  1-roll 4" elastic bandage
  1-roll 2" elastic bandage
2-1/2" roll adhesive tape
  4-4" bandage compress
3-3" gauze compress
2-2" gauze compress
  3-8x10 gauze pads
  2-5x9 gauze pads
  2-eye dressing packets
   25-plastic finger tip bandages
   10-oval coverlets, bandaids
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#### Bottom Compartment

```
1-burn & trauma dressing 18x24"-arm
 1-burn & trauma dressing 24x31"-leg
 1-disposal blanket
 1-set of body binders
1-cervical collar-lg
1-trauma dressing 30x10"-Dyna Med
1-sterile burn sheet 66x99-Dyna Med
1-4 1/2x6" self adhesive gauze
1-full leg air splint
1-1/2 leg air splint
1-foot/ankle air splint
1-full air air splint
 1-1/2 arm air splint
 1-hand/wrist air splint
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FIRST AID KIT CONTENTS ATTACHMENT 2

Elastoplast Knuckle Converlets

Form-Cut Fingertip Bandages

1" Adhesive Bandaids

3" x 3" Sterile Gauze Pads

1/2" Adhesive Tape

1" Adhesive Tape

Merthiolate Swabs

Triangular Bandages

Eye Dressing Kits

2" Compress Bandages

4" Compress Bandages

2" Gauze Bandage

4" Gauze Bandage

Antiseptic Soap Swabs

Sting Kill

First Aid Cream

Poison Ivy Solution

Tweezers

Eye Cup

Eye Wash Solution

Tourniquet, Forceps + Scissors

2

## MEDICAL TREATMENT ROOM EQUIPMENT LIST ATTACHMENT 3

	Equipment Type	Quantity	Location
1.	Surgical Sutures (4-0) Cuticular 662G	1 Box (12)	Cabinet 1
2.	Surgical Sutures (000) Cuticular H 882G	1 Box (12)	Cabinet 1
3.	Reflex Hammer	1 ea.	Cabinet 1
4.	Straight Safety Razor	1 ea.	Cabinet 1
5.	Hair Clippers	1 set	Cabinet 1
6.	2" Adhesive Tape	3 rolls	Cabinet 1
7.	1/2" Adhesive Tape	6 rolls	Cabinet 1
8.	1" Adhesive Tape	5 rolls	Cabinet 1
9.	Scissors	1 pair	Cabinet 1
10.	Finger Ring Cutter	1 ea.	Cabinet 1
11.	4" Elastic Wrap	7 rolls	Cabinet 1
12.	2" Elastic Wrap	7 rolls	Cabinet 1
13.	Disposable Syringes	96 ea.	Cabinet 1
14.	AMBU Resusitator	1 ea.	Cabinet 1
15.	Arm Splint	1 ea.	Cabinet 1
16.	Otoscope	1 ea.	Cabinet 2
17.	Sphygmonanometer	1 ea.	Cabinet 2
18.	Illuminator for Disposable Laryngoscope	1 ea.	Cabinet 2
19.	Small size curved Disposable Laryngo-		
	scope	10 ea.	Cabinet 2
20.	Large size curved Disposable Laryngo-		
	scope	10 ea.	Cabinet 2
21.	Flashlight	1 ea.	Cabinet 2
22.	19 Gage Scalp and Small Vein Set	2 sets	Cabinet 2
23.	21 Gage Scalp and Small Vein Set	2 sets	Cabinet 2
24.	Intravenous Injection Set	2 sets	Cabinet 2
25.	Martin Laryngectomy Tube, Size 8	1 ea.	Cabinet 2
26.	Martin Laryngectomy Tube, Size 10	1 ea.	Cabinet 2
27.	2 BU, Trachex Tube	1 ea.	Cabinet 2
28.	2 AU, Trachex Tube	1 ea.	Cabinet 2
29.	Sterile Cotton Tipped Applicator	24 ea.	Cabinet 2
30.	Sterile Tongue Depressor	33 ea.	Cabinet 2
31.	Rubbing Alcohol	1 bottle	Cabinet 2
32.	Eye Wash Irrigator	2 bottles	Cabinet 2
33.	Tincture Benzoin	2 bottles	Cabinet 2
34.	Extra Large Bandaids	1 box	Cabinet 2
35.	Plastic Kidney Tray	2 ea.	Cabinet 2
36.	Combine Dressing	1 box	Cabinet 2
37.	Finger Splint Tape	1 roll	Cabinet 2
38.	Triangular Bandage	1 ea.	Cabinet 2
39.	Bandaids	1 box	Cabinet 2
40.	Velcro Tourniquet	1 ea.	Cabinet 2
41.	Oval Eye Pads	1 box	Cabinet 2
42.	2" x 2" Gauze Pads	1 box	Cabinet 2
43.	4" x 4" Gauze Pads	1 box	Cabinet 2
44.	Minor Laceration Pads with Instruments	4 sets	Table 2/Drawer

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## MEDICAL TREATMENT ROOM EQUIPMENT LIST ATTACHMENT 3 (Con't)

		Equipment Type	Quantity	Location
	45.	Sterile Trachectomy Care Set	1 set	Table 2/Drawer 3
	46.	Basic Suction Kit	2 kits	Table 2/Drawer 3
	47.	Napkins		Table 2/Drawer 4
	48.	Buckhous Towel Clamp	4 ea.	Table 2/Drawer 1
	49.	Surgical Razor Holder	1 ea.	Table 2/Drawer 1
	50.	Razors	12 ea.	Table 2/Drawer 1
	51.	Large Tweezers	1 ea.	Table 2/Drawer 1
	52.	Small Tweezers	1 ea.	Table 2/Drawer 1
	53.	Pick	1 ea.	Table 2/Drawer 1
	54.	Tissue Forceps	2 ea.	Table 2/Drawer 1
	55.	Large Towel Clamp	1 ea.	Table 2/Drawer 1
	56.	Surgical Shears	4 pairs	Table 2/Drawer 1
	57.	Kelly Murphy	1 ea.	Table 2/Drawer 1
	58.	Rectal Thermometer	1 ea.	Table 2/Drawer 1
	59.	Oral Thermometer	5 ea.	Table 2/Drawer 1
	60.	Thermometer Holder	2 ea.	Table 2/Drawer 1
	61.	Towels	2 ea.	Table 2/Drawer 6
	62.	Examination Clothes	2 sets	Table 2/Drawer 6
1	63.	REMS Medical Kit	3 kits	Table 2/Drawer 7
	64.	Surgical Gloves	12 pairs	Table 1/Drawer 2

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FIRST AIR CASE CONTENTS (Emergency Medical Equipment Cabinet, 623' Turbine Bldg.)

#### ATTACHMENT 4

1-Towel 2-Blankets 4-paper sheets - not sterile 1-cloth sheet - not sterile 10-wood splints 5-body binders 6-air splints - full leg full arm 1/2 leg 1/2 arm hand/wrist foot/ankle 1-med. cervical collar 1-lg. cervical collar 1-30x10" Trauma Dressing 3-36x99" burn sheets 1-flashlight

wrist & chin straps/backboard pillow for backboard

EMERGENCY MEDICAL EQUIPMENT CABINET CONTENTS (623' Level Turbine Bldg.)

#### ATTACHMENT 5

Demand valve resuscitator and aspirator unit (Robert Shaw) Adult Hope II resuscitator 0'2 double sphere unit Full length backboard Short Backboard Hare traction leg splint Stretcher Shovel Axe CPR board Hot stick Bolt cutters Crowbar Thermal gloves Sterile water (pint bag) Orange trauma kit First aid case Sky Geni Decent Device (100' nylon line)

DAVIS-BESSE NUCLEAR POWER STATION

### THE TOLEDO EDISON COMPANY

EMERGENCY PLAN SUPPORTING PROCEDURES

THIS MANUAL IS THE SOLE PROPERTY OF THE TOLEDO EDISON COMPANY. IT MAY BE RECALLED AT THE OPTION OF TOLEDO EDISON. THIS MANUAL MAY NOT BE REPRODUCED.

CONTROL COPY NO.: 50A

ISSUED TO: NRC - NUCLEAR REACTOR REGULATION

DATE: MAY 1, 1983

ISSUED BY: STATION SUPERINTENDENT/EMERGENCY PLANNING

#### THE TOLEDO EDISON COMPANY DAVIS-BESSE NUCLEAR POWER STATION EMERGENCY PLAN SUPPORTING PROCEDURES REVISION INDEX

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	AD 1827.08		
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		9	
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	AD 1850.05	6	
	AD 1850.03	0	
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No. 41	Emergency Duty Officer (EDO)	27
No. 42	Radiation Monitoring Teams (RMT)	19

Revision 176 April, 1983

## EMERGENCY PLAN SUPPORTING PROCEDURES

1.	External Personnel Radiation Exposure Monitoring (HP 1602.01)
2.	Personnel Decontamination (HP 1604.01)
3.	Area and Equipment Decontamination (HP 1604.02)
4.	Annual Radiation Emergency Medical Exercise (AD 1827.01)
5.	Medical Treatment of Injuries (AD 1827.02)
6.	011 Spill (AD 1827.03)
7.	Overexposure/Internal Contamination (AD 1827.04)
8.	Explosion (AD 1827.05)
9.	Tornado (AD 1827.06)
10.	Earthquake (AD 1827.07)
11.	Flooding (AD 1827.08)
12.	Radioactive Transportation Accident (AD 1827.09)
13.	Emergency Offsite Dose Estimates (AD 1827.10)
14.	Assembly Accountability and Subsequent Evacuation (AD 1827.11)
15.	Protective Action Guidelines (AD 1827.12)
16.	Containment Evacuation (AD 1827.13)
17.	Area and Equipment Decontamination (AD 1827.14)
18.	Emergency Isolation (AD 1827.15)
19.	Search and Rescue (AD 1827.16)
20.	Emergency Call System (AD 1827.17)
21.	Post Accident Radiological Sampling and Counting (AD 1850.04)
22.	Radiation Monitoring Team Surveys (AD 1850.05)
23.	Radiation, Contamination and Airborne Radioactivity Monitoring During Emergencies at the Davis-Besse Administration Building (DBAB) (AD 1850.06)

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Revision 7 December, 1982

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Davis-Besse Nuclear Power Station

Unit No. 1

Health Physics Procedure HP 1602.01 External Personnel Radiation Exposure Monitoring

# NUCLEAR SAFETY RELATED

## Record of Approval and Changes

Prepared By Ron Scott & John Tapley	11/28/73
	Date
Submitted By D. W. Briden	5/17/74
Section Head	Date
Recommended By Jack Evans	5/17/74
SRB Chairman	Date
QA Approved N/A	
Quality Assurance Director	Date
Approved ByJack Evans	5/17/74
Station Superintendent	Date

Revision	SRB		QA		Sta. Supt.	
No. 12	Briden	Date 2/8/83	Approved N/A	Date	Approval	Date
	 				To munoy	3/10/83

#### 1. PURPOSE

- 1.1 This procedure describes the monitoring and recording of external personnel radiation exposure and the monitoring for personnel contamination.
- 2. REFERENCES
  - 2.1 Health Physics Procedures Guides and Limits for Radiation Exposure, HP 1601.01.
  - 2.2 Title 10 CFR Part 20 (Standards for Protection Against Radiation).
  - 2.3 FSAR, Section 12.3 (Health Physics).
- (TS) 2.4 Technical Specifications Section 6.10.2 (Station Operating Records).
  - 2.5 American National Standards INSI N13.6 1966 (R1972), Practice for Occupational Radiation Exposure Records System.
  - 2.6 AD 1808.08 Access Control
  - 2.7 HP 1601.03 Radiation Exposure Permits
  - 2.8 NRC Regulatory Guide 8-14, Personnel Neutron Dosimeters

#### 3. EQUIPMENT REQUIRED

- 3.1 Thermoluminescent dosimeters (TLD's)
- 3.2 Self-reading pocket dosimeters
- 3.3 Dosimeter chargers
- 3.4 Neutron sensitive dosimeters
- 3.5 Health physics personnel contamination monitoring equipment
  - 3.5.1 Fortal monitors
  - 3.5.2 Hand and foot counters
  - 3.5.3 Hand-held friskers

#### 4. DATA SHEETS REQUIRED

4.1 NRC Form 4 (Attachment 1)

- 4.2 NRC Form 5 (Attachment 2)
- 4.3 Radiation Exposure Record, ED 6458 (Attachment 3)

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- 4.4 Dosimeter Record, ED 6547 (Attachment 4)
- 4.5 Visitors TLD Log (Attachment 5)
- 4.6 Temporary TLD Exposure Record (Attachment 6)
- 4.7 Extremity Badge Log (Attachment 7)
- 4.8 Toledo Edison Temporary TLD Issue (Attachment 8)
- 4.9 Current Radiation Exposure Record (Attachment 9)
- 4.10 Dosimeter Record for Neutron Calculation (Attachment 10)

#### 5. PRECAUTIONS AND SAFETY

- 5.1 TLD's and self-reading dosimeters must be protected against loss or damage. Report any loss or damage to the Chemistry and Health Physics Section immediately. Badges and dosimeters must not be removed from the site.
- 5.2 Care should be exercised not to jar, or drop pocket dosimeters as false readings may be obtained. Dropping a dosimeter discharges the electroscope which may give an off scale reading indicative of a high exposure dose. Return a pocket dosimeter to the Health Physics Monitor Room immediately when an offscale reading is observed. An estimate of the dose received will be made and the dosimeter rezeroed.

#### 6. PROCEDURE

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6.1 Thermoluminescent Dosimeter Badges (for beta and gamma dosimetry)

NOTE :

For neutron dosimetry, see Section 6.1.5.

- 6.1.1 Personnel assigned to the station and any person likely to receive a dose in any calendar quarter in excess of 25 percent of the quarterly dose limit for whole body, extremities, or skin of whole body shall be given a "permanent" or a "temporary" TLD Badge.
  - Any individual likely to receive an exposure to his extremities in excess of 5 times his whole body exposure, his extremities shall be monitored if a significant dose is expected.

 Special attention must be given to nonuniform radiation fields so that the region of body (head, chest, or gonadal area) is monitored, whichever receives the highest exposure.

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- 3. Personnel with "permanent" TLD badges will pick up their badges at the gate office upon entering the station and return them to the gate office when leaving the station. Badges are supplied by the Chemistry and Health Physics Section.
- 4. Personnel with "temporary" TLD badges normally pick up their badges at the PPF and return them to the PPF exit whenever leaving the Station. Temporary TLD's are issued by Chemistry and Health Physics personnel at the beginning of each month or whenever needed.

NOTE :

Visitors will turn their "temporary" TLD's in at the exit to RACA.

NOTE :

A scif-reading dosimeter or an alternate means of estimating personnel exposure approved by the Chemist & Health Physicist or his designee may be substituted for a TLD.

- For personnel issued permanent TLD's, the following must be done by Chemistry & Health Physics personnel.
  - An NRC Form 4 (Attachment 1) must be completed as instructed on the form.
  - (2) Past radiation exposure records must be obtained before the quarterly whole body exposure is permitted to exceed 1.25 Rem.
  - (3) A radiation exposure record must be kept (NRC Form 5, Attachment 2). This record shall be updated quarterly from monthly TLD readouts. This record must be preserved indefinitely and the data reported annually within the first calendar quarter to the NRC as required in 10 CFR 20.401 and 20.407.

- (4) Upon termination of employment or work, or in the event of overexposure, the NRC and the individual must be furnished a report of personnel exposure as required in 10 CFR 20.405, 20.408, and 20.409. Upon request, the individual must be furnished a report of his exposure.
- 6.1.2 Other persons required to enter RACA shall be issued a "visitor" or "temporary" TLD badge. For these persons, the following applies:

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- Continuing visitors, contractors, and other utility personnel not assigned to DBNPS who will be entering known radiation areas shall be issued a "temporary" TLD badge by the Chemistry and Health Physics Section. "Temporary" TLD badges are to be read monthly.
- 2. "Temporary" TLD's shall be issued the first time an individual enters RACA for the current calendar month. Attachment Nos. 6 and 8, "Temporary TLD Issue Log"and "Toledo Edison Temporary TLD Issue Report", shall be filled out for each Temporary TLD as it is issued. The Temporary TLD will be removed from use at the end of each month. These individuals requiring a Temporary TLD shall have Chemistry and Health Physics re-issue them a new Temporary TLD each month.
- 3. Attachment No. 8 shall contain all required Attachment 9 information and is to be updated from monthly TLD readouts with each individual's monthly exposure recorded. This record must be preserved indefinitely and the data reported annually within the first calendar quarter to the NRC as required in 10 CFR 20.401 and 20.407.
- 4. Upon termination of employment or work, or in the event of overexposure, the NRC and the individual must be furnished a report of personnel exposure as required in 10 CFR 20.405, 20.408, and 20.409. Upon request, the individual must be furnished a report of his exposure.
- 5. Visitors who are at DBNPS for only a few days and who will be entering RACA, shall be issued a "visitor's" TLD. The visitor's TLD will be issued at the entrance to RACA the first time the visitor enters RACA and returned to the RACA entrance when exiting.

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NOTE :

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Persons wearing a "VISITOR" TLD badge and have completed RCT may enter RACA unescorted. Those persons who do not have current RCT training must be escorted by an individual who has current training. This does not remove necessity for escorts for security reasons.

- 6. When "visitor" TLD is issued, the visitor shall supply the information requested in Attachment 5, Visitor's TLD Log. The "visitor" TLD badge may be reused by another visitor unless a radiation exposure is known or suspected. If an exposure is suspected, the "visitor's" badge is to be retained for readout (ie., a net exposure on self-reading dosimeter in excess of 20 MREM).
- The visitor's TLD's shall be read out monthly and the dose recorded according to TLD badge number only.

CAUTION:

Individuals who have "visitor" TLD badges should receive essentially no dose; the Chemistry and Health Physics Section should be notified when visitors will be allowed to enter radiation areas to determine whether a "permanent" or "temporary" TLD badge should be issued. Under no circumstances should "visitor" badged individuals be permitted to receive a dose in any calendar quarter in excess of 25% of the quarterly dose limit for the whole body.

- 8. Individuals using Visitor TLD's being being escorted are not required to sign in on an REP. The escort is responsible to verbally inform his visitor(s) of the conditions and health physics requirements in the area. The dosimeter readings and times are entered on the Visitor Badge Record Sheet (Attachment 5).
- 6.1.3 Personnel shall wear the TLD badge on the front of the body between the knee and head so that an accurate measurement of whole body dose can be made.

NOTE :

The whole body includes the area of the body from the top of the head to the kncse. The TLD should be worn

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in that region of the whole body which is likely to receive the highest dose.

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A. When worn in an area of contamination or high contamination, the TLD badge should be worn in the pocket of the coveralls so that it is protected from contamination.

NOTE :

If the work area has higher radiation levels which require checking the dosimeter frequently, place dosimetry in a plastic bag.

6.1.4

Extremity TLD's shall be used when specified as a requirement on a Radiation Exposure Permit (REP). They should be worn on the hand or foot which is likely to receive the highest radiation dose. They should be worn so that the TLD is not shielded by the hand or foot.

NOTE :

If extremity monitoring is to be provided then the Extremity Monitoring Log Sheet (Attachment 7) must be filled out and placed in the Temporary Badge Issue book for that month.

#### 6.1.5 Neutron Dosimetry

- Neutron whole body doses should be limited to 300 mrems per quarter.
- 2. There are three methods which can be used to assign personnel exposures from neutrons:
  - Multiply the self-reading dosimeter reading times five (5); or
  - (2) Multiply the time exposed to neutrons times the neutron dose rate determined from the measurement of a Neutron Rem-Counter; or
  - (3) Use the integrated neutron dose determined with the RASCAL Neutron Rem-Counter.

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B. TLD badges must be secured so that there is no chance for loss.

- 3. When working in areas where there is a potential for neutron exposures, each individual is to sign in on Attachment 10 (Dosimeter Record for Neutron Calculation). Send the completed Attachment 10 to the Health Physics Supervisor to ensure that the individual's neutron exposure is added to his exposure record.
- 6.2 Self-Reading Dosimeters
  - 6.2.1 The self-reading dosimeter is used as a dayby-day indication of personnel gamma exposure so that exposure guide values given in HP 1601.01 will not be inadvertently exceeded. In the event that a TLD badge is lost or damaged, the dosimeter readings are used to replace the lost TLD badge official records.

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- 6.2.2 All personnel entering RACA shall wear a self-reading dosimeter. Personnel are to wear the dosimeter in close proximity to the TLD badge.
- 6.2.3 Persons requiring access to the Radiation Access Control Area (RACA) shall be issued a self-reading pocket dosimeter for which they shall be responsible.
- 6.2.4 Before entering the RACA, personnel may "zero" their own dosimeter by inserting it in the dosimeter charger and adjusted the control until the hairline is on zero.

NOTE :

After the dosimeter is removed from the charger, the zero position should be checked because the hairline may shift its position when the dosimeter is removed from the charger. If this happens, the dosimeter should be replaced in the charger and adjusted below zero to compensate for the shift.

- 6.2.5 At the end of each work day when the RACA was entered, "permanent and temporary" TLD badge wearers shall read their dosimeter and record the radiation dose received on their Radiation Exposure Record, ED 6458 (Attachment 3).
  - 1. The Radiation Exposure Record is signed the first time an entry is made for each month.
  - An individual's daily dose is recorded in the "Daily" column next to the number corresponding to the day of the month.

 The "Daily" dose is added to the accumulated whole-body exposure and recorded in the "Quarter" column.

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- Radiation Exposure Record cards are administered by the C&HP Section. When the mouthly TLD results are received, the cards will be corrected.
  - (1) When the dose for the "running total calendar quarter" from TLD results exceeds 300 mrem, the current Radiation Exposure Record card shall be corrected to agree with the TLD record.
  - (2) Corrected entries are made on the card by Chemistry and Health Physics personnel who will initial and date any corrections.
- The C&HP Section will provide assistance in zeroing dosimeters, readings, and recording exposures.
- 6.2.6 Four models of the self-reading dosimeter are used. Selected according to REP requirements.
  - 1. 0-200 or 0-500 mR range for normal use
  - 0-1R range dosimeter used for entering high radiation areas
  - 0-5R range dosimeter used when the quarterly dose is approached for a single exposure
  - 4. 0-100R range dosimeter for lifesaving

NOTE :

The O-1R and higher dosimeters are used only on a planned basis.

- 6.2.7 Personnel zero their own dosimeters before entering the RACA when the reading is greater than 20% (40 mR for 0-200 mR, and 100 mR for 0-500) of full scale. On the Dosimeter Record ED 6547 (Attachment 4), enter the information required. The issuance and use of the Dosimeter Record is covered in HP 1601.03, Radiation Exposure Permits.
- 6.2.8 Personnel will periodically check the reading (exposure) on their dosimeters during the course of a day. When working in a high radiation area, personnel shall

check their dosimeter readings (exposures) before entering, during occupancy, and upon leaving the area.

6.2.9

.9 If at any time during the course of a day, a 0200 or 0-500 mR range dosimeter exceeds 80% of the full scale reading (160 mR for 0-200 mR range, or 400 mR for 0-500 mR range), the wearer shall return to the Health Physics Monitor Room to have C&HP personnel record the dose, check his quarterly accumulated dose, and rezero the dosimeter before re-entering the RACA.

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- 6.2.10 If at any time a personnel dosimeter is found to be off scale, a read-out of the individual's TLD Badge is required before an individual is allowed to return to RACA, unless the Chemist & HP or his designee determines that the off scale reading is not due to over exposure.
- 6.2.11 Personnel who are working in contaminated areas shall not read dosimeters by holding with contaminated gloves. Gloves shall be removed carefully or clean gloves placed on over contaminated gloves before handling personnel dosimeter. A second individual who is known to have "clean" non-contaminated gloves may read other persons' dosimeters in order to determine exposures.
- 6.2.12 Every effort should be made to prevent contamination of personal dosimeters. When it is known or suspected that they have become contaminated, they shall be delivered to C&HP Section for surveying and de-contamination if necessary.
- 6.2.13 Whenever personal dosimeters are lost or damaged, the individual shall immediately leave the RACA and notify C&HP Section. A reasonable estimate of the dose received by the lost or damaged dosimeters will be made for record purpose.

#### 6.3 Friskers

6.3.1

The NRC and INPO guideline for personnel contamination is 5000 dpm/100  $cm^2$ . A frisker is the only type of personnel monitor capable of detecting contamination at 5000 dpm (or 500 cpm as read from the rate meter). Anyone leaving a Contamination or High Contamination Area must frisk as described in this section before leaving RACA.

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- 6.3.2 Count-rate meters (friskers) will be installed in locations in the station where monitoring for personnel contamination is deemed necessary. The monitors will be set up and the alarm point set by the Chemistry and Health Physics Section. The alarm setting and range selection switch must not be changed by personnel using the monitor. Personnel other than Chemistry & HP should use only the volume control and the reset button.
- 6.3.3 Approach to probe (detector) of the unit with the hands, but don't pick it up until the hands are moved slowly near the probe (as close to the probe as possible without touching it). If the alarm sounds, de-contaminate the hands before touching the probe.
- 6.3.4 Once hands are shown to be free from contamination, pick up the probe.
- 6.3.5 Survey the rest of the body by passing the probe slowly over the body. Make an thorough survey of the bottoms of shoes, elbows, knees, face, and rear.
  - A. If no increase in the clicking rate is heard, no significant contamination is present.
  - B. If clicking rate increases, survey that area even more carefully. If the alarm does not sound, no significant contamination is present.
  - C. If the alarm sounds, contamination is present and must be removed. Put on the clean gloves or shoe covers provided if the hands or feet are contaminated. Reset the alarm. Go to the H.P. Monitor Area until clean. Seek assistance from Chemistry & HP if necessary. Restrict movements until the source of contamination is determined and cleaned up.

NOTE :

Persons must not leave the RACA with contamination on their bodies, clothing, or equipment.

- 6.4 Hand and Foot Monitor
  - 6.4.1 A beta-gamma hand and foot monitor, located at the Radiation Access Control Area at Door 415, will provide a means of detecting the presence and general location of contamination on hands and shoes. After removing protective clothing and washing hands, the

hand and foot monitor shall be used before leaving the Radiation Access Control Area at Door 415.

6.4.2 To use the hand and foot monitor, stand on the front apron and place hands in the slots provided.

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- 6.4.3 Wait for the time period indicated on the monitor. If there is no alarm response, the hands and shoe bottoms may be considered free of contamination.
- 6.4.4 If there is an alarm response, observe the various meters to determine which hand or foot has the high count rate. Proceed as in Part C of Section 6.3.5. Reset the alarm.
- 6.4.5 A hand-held frisker is located on the side of the unit to detect contamination on clothing and localized areas of the body. Use it as described in step 6.3.

#### 6.5 Portal Monitor

- 6.5.1 A portal monitor (walk-thru) provides complete head to foot monitoring for beta-gamma contamination detection. All personnel must pass through the portal monitor as they exit the RACA through Door 415 or Door 310 and as they pass through the gate office when leaving the station.
- 6.5.2 Enter the portal monitor and stand for the pre-determined count time. If at the end of the counting time, there has been no alarm response, no contamination is present.
- 6.5.3 If the alarm sounds, contamination is present. Observe the various meters to determine the general location of the contamination. Proceed as in Part C in Section 6.3.5. Reset the alarm.

#### ATTACHMENT 1

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#### U. S. NUCLEAR REGULATORY COMMISSION

## OCCUPATIONAL EXTERNAL RADIATION EXPOSURE HISTORY

See Instructions on the Back

IDENTIFICATION

1. NAME (PRINT - LAST, FIRST, ANO	2. SOCIAL SECURITY NO.			
1 DATE OF BIRTH MONTH, DAY, YEA	AR;		4. AGE IN FULL	YEARS (N)
	OCCUPATIONAL EXM	SURE - PREVIOUS HISTORY		
S. PREVIOUS EMPLOYMENTS INVOLVING RADIATION EXPOSURE-LIST NAME AND ADDRESS OF EMPLOYER	6. DATES OF EMPLOYMENT	? PERMOS OF EXPOSURE	S WHOLE SODY	9 RECORD OR CALCULATE
	12.00			
	학 - 한 역원			
이 것이 같은 것을 가 같다.	않는 소 소 나서			
신간 사람이 많다. 왜				
				•
O. REMARKS	11. ACCUMULATED	OCCUPATIONAL DOSE		

	LOULATIONS - PERMISSIBLE DOSE BODY:		12. CERTIFICATION: I CERTIFY THAT TH LISTED IN COLUMNS 3. 6. AND 7 IS CO	RRECT AND COMPLETE
(A)	PERMISSIBLE ACCUMULATED DOSE = 5(N-18)	REM	TO THE BEST OF MY KNOWLEDGE AN	O BELIEF.
(8)	TOTAL EXPOSURE TO DATE	REM	EMPLOYEE'S SIGNATURE	DATE
	UNUSED PART OF PERMISSIBLE ACCUMULATED DOSE (A-8)	REM	14. NAME OF LICENSEE	

#### ATTACHMENT 1

#### INSTRUCTIONS FOR PREPARATION OF NRC FORM 4

This form or a clear and legible record containing all the information required on this form must be prepared by each lucensee of the Nuclear Regulatory Commission who, pursuant to Section 20.101, propuses to expose an individual to a radiation dose in excess of the amounts specified in Paragraph 20.101(a) of the regulations in Part 20. "Standards for Protection Against 10 CFR The requirement for completion of this Radiation form is contained in Section 20.102 of that regulation. The information contained in this form is used for estimating the external accumulated occupational dose of the individual for whom the form is completed. A separate Form NRC 4 shall be completed for each individual to the exposed to a radiation dose in excess of the limits specified in Paragraph 20.101(a) of Part 20 of the Commission's regulations." Listed below by item are instructions and additional information directly pertinent to comstering this form.

#### Identification

- Item 1. Self-escianatory. Item 2. Self applanatory except that, if individual has no shuial security number, the word "none" shall be inserted.
- Item 3. Seif explanatory Item 4. Enter the age in full years. This is called "N" when used in calculating the Permissible Dose. N is equal to the number of years of age of the monordual on his last birthday.

#### Occupational Expo

Item 5. List the name and address of each previous employer and the accress of employment. Start with the most recent employer and work back

> include only those periods of employment since The eighteenth birthday involving occupational exposure to radiation. For periods of self-employ-ment, insert the word "self-employed."

- Item 6. Give the dates of each employment listed in item 5. Item 7. List periods during which occupational exposure
- to radiation occurred.
- Item 8. List the dose recorded for each period of exposure from the records of previous occupational exposure

#### PRIVACY ACT STATEMENT

Aurouant to 5 U.S.C. 552249 (3), enacted into law by section 3 of the Privacy Act of 1974 (Public Law 93-579), me following statement is furnished to individuals who supply information to the Nuclear Repuision/ Commission on Form NRC4. This information is manualized in a system of records design-ted at NRC 27 and described at 40 Federal Reputer 45344 (Uctober 1, 1975).

- AUTHORITY Sections 53, 53, 55, 51, 103, 104, 161(b), and 161(a) of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2073, 2093, 2096, 2111, 2133, 2134, 2201(a), and 2201(a)). The authority for solucian and instanty number is 10 CFR Part 20. 1. AUTHORITY
- PRINCIPAL PURPOSE(5) The information is used by the NRC in its evaluation of the risk of reditation exposure associated with the licensed activity and in exampling its statutory responsetility to monitor and require the rafety and hearth practices of its licensees. The data permits a meaningful comparison of both examples and long-term subdaure intervence among types of licensees and among licensees within each type. Data on your exposure to reditation is evaluable to you 2 PRINCIPAL PURPOSE(S) UDOR MOUNTL
- ROUTINE USES The information may be used to provide data to other Federal and State spences involved in monitoring and/or evaluation ex-possible Received or Individuals employed as rediction workers on a permanent or temporary basis and exposure received by monitoried visitors. The information may also be clustoad to an appropriate Federal, State, or local spency in the event the information indicates a violation or potential violation of law and in the opume of an apministrative or judicial proceeding. 1 ROUTINE USES
- 4. WHETHER DISCLOSURE IS MANDATORY OR VOLUNTARY AND EFFECT ON INDIVIDUAL OF NOT PROVIDING INFORMATION It is vok The INEX DISULUSIONE IS INAMUM FOR THE VOLUMERATY AND EFFECT ON INDIVIDUAL OF NOT PROVIDING INFORMATION. THIS YOUNG THE INEX DISULTS IN THE REQUESTED INFORMATION. INCluding social security number: however, the licenses must neve a completed form NRC4 on eech individual when the licenses process to erace to a reduction now in excess of the amounts specified in 10 CFR 20.10113. Failure to obtain the requested information before primiting such as power and subject the licenses to enforcement action in accordance with 10 CFR 20.501. The social security number is used to assume the NRC has an accursic identifier not subject to the councidence of smiller nemes or burthistes among the large number of persons on whom data is maintained.

& SYSTEM MANAGERISI AND ADDRESS Director, Cifice of Management Information and Program Comm U.S. Nuclear Requirecory Commission, Washington, D.C. 20555

of the individual as calculated under Section 20,102 Dose is to be given in rem.

"Dose to the whole body" shall be deemed to in clude any dose to the whole body, gonads, ictive blood forming organs, head and trunk, or lens of ----

Item 9. After each entry in Item 8 indicate in Item 9 whether dose is obtained from records or calcu lated in accordance with Section 20.102. Item. 10. Seif explanatory.

Item 14. Self-explanatory.

\* Total Acrumulated Occupational Dose (Whole Body)

Item 11. The total for the whole body is obtained by furnmation of all values in Item 8.

Carofication

Item 12. Upon completion of the report, the employee must certify that the information in Columns 5. 6. and 7 is accurate and complete to the best of his knowledge. The date is the date of his signature.

Calculations

Item 13. The lifetime accumulated occupational dose for each individual and the permissible cose under Paragraph 20.1011b) are potained by carrying out the following steps: The value for N should be taken from I tem 4. Subtract 18 from N and nuit: pry the difference by 5 rem. (For example, John Smith, age 32, N = 32, PAO = 5(32 13) = 70 rem.) enter total exposure to date from item 11 Sub-tract (b) from (a) and enter the difference under (c). The value in (c) represents the unused part of the permissible accumulated dose. This value for permissible dose is to be carried forward to Form NRC-5, "Current Occupational External Radiation Exposure (Whole Body)."

#### ATTACHMENT 2

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## U. & MUCLEAR REGULATORY COMMISSION

CURRENT OCCUPATIONAL EXTERNAL RADIATION EXPOSURE

IDENTIFICATION 2 SOCIAL SECURITY NO. . 1. NAME IPRINT - LAR first and muddle 4. N. ME OF LICENSEE 1 DATE OF BIRTH ("tont GAV. YEAR) 7. METHOD OF MONITORING (s.g. Firm Bager -FB; Pocket Chemoer - PC; Calculations - Calc.) X OR GAMMA \_\_\_\_\_\_ BETA \_\_\_\_\_ S. DOSE RECORDED FOR Specify: Whole DODY; & WHOLE BODY DOSE skin of whole body; or hands and forearms, feet and analiss.) STATUS (rem) NEUTRONS\_\_\_\_\_ 13 RUNNING TOTAL FOR DOSE FOR THE PERIOD (rem) & PERIOD OF EXPOSURE CALENDAR QUARTER (From - To) trami 11. NEUTRON 12 TOTAL . X OR GAMMA IQ BETA į LIFETIME ACCUMULATED COSE ------IL TOTAL QUARTERLT 18 TOTAL ACCUMULATED W. PREVIOUS TOTAL MINI -

#### ATTACHMENT 2

The preparation and safekeeping of this form or a clear and legible record containing all the information renuired on this form is re-guired outsians to Section 20 401 of "Standards for Protection Against Radiation." 10 CFR 20 as a current recent of occupational is ternal reduction of the section a record through the santained for each individual for whom persunnel monitorian is required under Section 20.202. Note that a record Form NR C5 is to be used for recording external evolute to 111 the whole body (2) skin of whole body. (3) hands and torearms; or (4) rest and ankles, as crowled by item are instructions and additional information directly pertinent to completing this form.

- Identification
- item 1. Self-exclanatory. Item 2. Self-exclanatory except that, if individual has no social security number, the word "none" shall be inserted. Item 3. Self-exclanatory. Item 4. Self-exclanatory.

- Occupational Exposure
- Occupational Exposure Item 5, "Does to the whole body" shall be deemed to include any does to the whole body, gonads, active blood forming organs, head and truns, or iers of eve. Unless the lenses of the eves are protected with eve whileds, does recorded at whole body does thould include the does delivered through a tissue equivalent aborber naving a thickness of 300 mg cm<sup>2</sup> or less. When the lenses of the eves are pro-tected with eve sinelids having a tissue equivalent blockness of at least 700 mg/cm<sup>2</sup> does recorded as whole body dote should include the does delivered througs, a fissue equivalent aborber having a thickness of 1,000 mg/cm<sup>2</sup> or less.

Does recorded as dose to the twin of the whole body, hands and forearms, or feet and sinkles should include the odse delivered through a tissue equivalent absorber having a thickness of 7 molicher or rest. The odse to the twin of the whole body, hands and forearms or feet and ankies should be recorded on secarate forms unless the dote to those parts of the dody has been included as dose to the whole body on a form maintained for recording whole body.

Hern 8. Does received our it balls for menuiced at a does to the individual while body with a ball of the individual while body exposure.
Hern 8. This item need be completed only when the sheet is used to record whole body. Enter in a bit item the unused bar of bar, musice accumulated goes taxen from previous set of the individual where the provisions of Paragraphic at the individual where the provisions of Paragraphic at the individual where the provisions of the provisions

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Self exclanatory. The values are to be oven in rem All measurements are to be interpretent in the best method known and in accordance with Paragraph 20 4(e) Where calculations are made to determine dose, a coine of such calculations is to be maintained in conjunction ...(h this record, in any case where the nost for a cuterin are quarter is less than 10°, of the value specified in Pari plaum 20.101(a), the onrase "lies than 10°," may be entered in disconding the source of the total of the entered of expodure and record the total in or exchined the "Total" any entry "less than 10°, in may the divergance calendar quarters. Paragraph 10 and 11 for exchined the values under items 9.10 and 11 for exchined of expodure and record the total in culculating the "Total" any entry "less than 10°. Imay the divergance calendar quarters. Paragraph 20.2012 all 4 interescaled the quarter for enter resolution doses are recorded in items 9. 10, 11 and 12.

- 1tem 12.
- Item 13.

#### Lifeame Accumulated Dose (Whole Body)

NOTE: If the license chooses to keep the individual's exposure below that permitted in Paragraph 2010; as thems the through 18 need not be completed. However, in mat care the total whole body dow for each calendar ouarter recorded in tem 13 lor item 12 in guarteriv dows are entered in item 12) anould not exceed 1 1/4 rem.

- the total whole occur downow acting a during recorded in item 13 to item 12 it austretiv downs are entered in item 12) anould not exceed 1 1.4 rem.
  If an individual is exposed under the provisions of Paragraph 20 101 (b), complete item 14 through 18 at the end of excending and the sheet is fulled. Values in item 13 when in the middle of a calendar quarter and values in item 13 when in the forward to resch subtret for value individual item 14. Inter the previous total accumulated doke from previous dose records for the individual item 16 and the previous total accumulated doke from previous dose records for the individual item. If form AEC 3 or NRC 4). The fortal accupational dose received from Sources of radiation nething any occupational dose received from sources of radiation nething form AEC 4 or VRC 4 and are common. If the individual was excluded to sources of radiation not individual must be entreted in the item individual by the 6 commission. If the individual was excluded to sources of radiation not individual was not work of an entret to 1.14 rems during each such to the commendent item 19 or from the foot acting form AEC 4 or VRC 4 and personnel item 10 itemset by the individual was not work of the individual was entered in the 11 m 12 item and the date calendar duarter date from item 19 or from item 12 if cuarteriv doses are entered in the 12 in the individual was are done of the individual to the in

#### PRIVACY ACT STATEMENT

Pursuant to 5 U.S.S. - Con Cal Angeted into law by section 2 of the Privacy Act of 1974 (Public Law 93-579), the following statement is furnished to individuals who Suboly information is a system of polatory Commission on Form NRC 5. This information is maintained in a system of records designated as NRC 27 and described at 48 Feorer (Typoter 6) 4 (00:0011, 1975).

am 52, 63, 55, 81, 103, 104, 161(b), and 161(a) of the Atomic Energy Act of 1954, as amendes (42 U.S.C. 2073, 2093, 2095, 2111, 2133, 1 Beach 215 The authority for soluciting the social security number is 10 CFR Part 20 6.6. 205

- 2 THE INCIDENCE POINT IN CONTINUES IN INCIDENT A used by the NRC in its evaluation of the risk of radiation exposure etsopated with the licensed activity and in the bang its statutory regionibility to monitor and regulate the safety and health practices of itsucenses. The data permit, in vaninglui comparison of both cur-rent and long term exposition among types of licenses and among licenses within each type. Data on your exposure to radiation is available to you upon TOUR PROUPSI
- The information may be used to provide data to other Feseral and State spencies involved in monitoring and/or evaluating radiation exocure received by individuals -moloved as reduction workers on a permanent or temporary dats and esoasure received by monitored visions. The information may also be 1 ROUTINE USES disclosed to an autoprise Pederal. State, or local agency withe event the information indicates a weistion or optential violation of law and in the course of an anterative or judicial proceeding.
- 4. WHETHER DISCLOSURE IS MANDATORY OR VOLUNTARY AND EFFECT ON INDIVIDUAL OF NOT PROVIDING INFORMATION that you furnish the requested information, including social scurity number; however, the licensee must complete Form NRC 5 on each individual for whom personnel monitoring is required under 10 CFR 20 202. Favure to is no may subject the licensee to enforcement action in accordance with 10 CFR 20.501 The social vicinity number is used to assure that NRC has an accurate identifier not subject to the councidence of similar names or birthdates among the large number of persons on whom data is maintained.
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ATTACHMENT 5

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### ATTACHMENT 8

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#### Davis-Besse Nuclear Power Station

Unit No. 1

Health Physics Procedure HP 1604.01

Personnel Decontamination

Record of Approval and Changes

Prepared by Bruce L. Geddes 2/6/76 Date D. W. Brid 2/10/76 Submitted by ion Head Date Sect Recommended by Date SRB Chairman NA DWB QA Approved \_ Manager of Quality Assurance Date Approved by Station Superintendent Date

Revision SRB QA Sta. Supt. Recommendation No. Date Approved Date Approved Date Heller 4/12/17 Stasue 3/4/80 11/2/32 mong 1/7/83 NA 4/14/77 us NA Drung 3/15/2 23 ~> muney/smap 11/12/82 NA 70 ming 1/24/83

#### 1. PURPOSE

1.1 This procedure delineates guidelines to be followed by all personnel in the methods of personnel decontamination.

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#### 2. REFERENCES

- 2.1 Davis-Besse Radiation Protection Manual, Section 3.5.4.2
- 2.2 US Department of Health, Education and Welfare Radiological Health Handbook
- 2.3 Health Physics Procedure External Personnel Radiation Exposure Monitoring, HP 1602.01.

#### 3. EQUIPMENT NEEDED

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3.1 Health Physics personnel contamination monitoring equip ment:

3.1.1 Rm-14 with HP 260 or HP 210 probe.

- 3.2 Protective clothing to prevent spread of contamination, such as plastic gloves, apron, bib, etc.
- 3.3 Personnel Decontamination Equipment (some of which could be):
  - 3.3.1 Gauze pads
  - 3.3.2 Cotton swabs
  - 3.3.3 Nail clippers
  - 3.3.4 Hair cutting equipment, such as clippers, scissors, etc.
  - 3.3.5 Safety razor and blades
  - 3.3.6 Soft brush
  - 3.3.7 Mild hand soap
  - 3.3.8 Special decontamination soap, such as Turco's "Decon Hand Soap"

#### 4. DATA SHEETS REQUIRED

4.1 Attachment II Personnel Contamination Worksheet

HP 1604.01.4

#### 5. PRECAUTIONS AND SAFETY

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5.1 Contact Chemistry and Health Physics Section personnel in event of any contamination of the hands or body or any contamination of the ears, eyes, nose or throat.

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- 5.2 Where contamination spread to open wounds is possible, contact the Chemistry and Health Physics Foreman or his designee before decontamination is started.
- 5.3 Only water will be used to decontaminate the mouth or nose.
- 5.4 When washing, caution must be exercised to prevent breaking the skin, as this creates a potential for internal contamination.
- 5.5 Never use water which is warmer than body temperature for washing, as this opens the body pores which may absorb contamination, creating a more difficult problem and potential internal contamination.
- 5.6 Decontamination shall be performed using the necessary precautions and protective clothing to prevent the spread of contamination.
- 5.7 Decontamination of skin with iodine absorption cannot be achieved. If levels of skin contamination cannot be reduced after several attempts have been made, a whole body count should be used to determine the presence of iodine contamination. If contamination levels are greater than 10,000 dpm, medical help may be necessary. Iodine levels in the skin less than 10,000 dpm could be released and so noted on Attachment I.
- 5.8 All personnel contamination/decontamination will be documented on Attachment II. Forward the completed Attachment II to the Health Physics Supervisor.

#### 6. ONSITE DECONTAMINATION PROCEDURE

- 6.1 Contamination of Hands or Body
  - 6.1.1 If contamination is detected on the body of radiation worker, contact the Health Physics Department for assistance.
    - NOTE: A person is considered contaminated when there is greater than 100 cpm over background as indicated on a RM-14 Frisker or other similar instrument.

6.1.2 Thoroughly wash the affected areas with mild soap for 2-3 minutes. When washing hands pay particular attention to finger nails and areas between fingers.

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- 6.1.3 Use lukewarm water, using caution to prevent contamination from entering any body openings or skin breaks, wash, starting with the head and proceeding downwards.
- 6.1.4 Rinse thoroughly with large amounts of clean water, dry and monitor with a survey instrument such as a RM-14 using HP 260 or HP 210 probe. If contamination levels exist greater than 100 cpm above background, repeat the washing and rinsing process two (2) more times using fresh water for each wash.
- 6.1.5 When surveying for contamination, be sure to check in areas where contamination may be hidden. Areas not previously contaminated must be surveyed as contamination may have been spread to those areas.
- 6.1.6 Decontamination is considered complete when the area is 100 cpm above background or less when monitored with an RM-14 with a HP 260 or HP 210 probe.
- The following steps are to be performed under the supervision of Chemistry and Health Physics Foreman:
  - 6.2.1 Cleanse the area with special decontamination soap, such as Turco's "Decon Hand Soap" (a soft brush may be used); dry the area and survey.
  - 6.2.2 Repeat Step 6.2.1 until contamination levels are less than 100 cpm above background or until there is no decrease in the level of contamination.
  - 6.2.3 If the contamination is located in and around the finger nails, clip or trim the finger nails as much as possible.
  - 6.2.4 If none of the proceeding steps are sufficient to remove the contamination, any further decontamination will be administered by the Chemist and Health Physicist or a medical coordinator.

HP 1604.01.4

#### 6.3 Hair Contamination

6.3.1 Contamination of the hair shall require the immediate notification of the Chemistry and Health Physics Foreman or his designee.

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- 6.3.2 If the contamination is present only in a small area, the hair may be cut off.
- 6.3.3 If washing is required, the hair should be washed with the individual in a position that will prevent the spread of contamination to other parts of the body.
- 6.3.4 Dry the hair and survey for contamination.
- 6.3.5 Continue Steps 6.3.3 and 6.3.4 until contamination levels are less than 100 cpm above the background or until there is no decrease in the level of contamination.
- 6.3.6 If none of the proceeding steps are sufficient to remove the contamination from the hair any further decontamination will be administered by the Chemist and Health Physicist or a medical coordinator.

#### 6.4 Contamination of the Ear

- 6.4.1 Contamination of the ear shall require the immediate notification of the Chemistry and Health Physics Foreman or his designee.
- 6.4.2 Contamination in the outer ear may be decontaminated with soap and tepid water on a cotton tipped swab, using care not to get any water in the inner ear. The swabs should only be damp and the individual shall tilt his head so that the ear is down.
- 6.4.3 Do not flush the ear with water or anything else.
- 6.4.4 Contamination in the inner ear or other methods of decontamination of the outer ear will only be administered under the supervision of the Chemist and Health Physicist or a medical coordinator.

HP 1604.01.2

6.5 Contamination of the Eyes or Mouth

6.5.1 Contamination of the eyes or mouth shall require the immediate notification of the Chemistry and Health Physics Foreman or his designee.

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- 6.5.2 The eyes and mouth may be flushed with tepid water but no other action may be taken.
- 6.5.3 When flushing the mouth, bend the individual over the sink to prevent swallowing of the water.
- 6.5.4 Any further decontamination steps will only be administered under the supervision of the Chemist and Health Physicist or a medical coordinator.
- 6.5.5 After decontamination, have the individual whole body counted to evaluate internal exposure.
- 6.6 Contamination of the Nose

- 6.6.1 Contamination of the nose shall require the immediate notification of the Chemistry and Health Physics Foreman or his designee.
- 6.6.2 Have the contaminated individual blow his nose into a facial tissue or paper towel.
- 6.6.3 Check the paper for contamination.
- 6.6.4 Check the nose for remaining contamination. If contamination remains, a damp cotton swab may be used for decontamination.
- 6.6.5 It is generally better if the contaminated individual performs the following steps himself:
  - Insert the damp swab into the nostril as far as possible. Exercise caution so that the swab does not touch the sides of the nostril during insertion.
  - 2. Press the swab lightly against the sides of the nostril and withdraw in a circular motion so all sides of the nostril are wiped. Check swab for contamination.
- 6.6.6 Continue Steps 6.6.5.1 and 6.6.5.2 until contamination levels are less than 100 counts above

background and are no longer decreasing or the nostril becomes tender.

6.6.7 If none of the above steps are sufficient to remove the contamination, any further decontamination will be administered by the Chemist and Health Physicist or a medical coordinator.

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6.6.8 After decontamination is complete, the individual showers and then will be whole body counted to check the internal exposure received.

#### 7. OFFSITE DECONTAMINATION PROCEDURE

- 7.1 . Offsite Decontamination Facilities
  - 7.1.1 Decontamination of a few plant employees during an emergency could be accomplished at the DBAB Radiological Testing Lab.
  - 7.1.2 The major Decontamination Center for an evacuation of Davis-Besse personnel is the TED Lindsey Service Center. This is located at State Route #590 and State Route #20.

#### 7.2 Offsite Decontamination

- 7.2.1 The Chemistry and Health Physics Section is responsible for monitoring and decontamination of personnel evacuated from the DBNPS.
- 7.2.2 The Chemist and Health Physicist or his designee will assign C&HP Testers to the Offsite Decontamination Center to perform monitoring and decontamination as required.
  - NOTE: The number of C&HP Testers assigned to the center will be determined by the number of DBNPS personnel evacuating to the center.
- 7.2.3 Personnel decontamination should first be attempted by using sealed towelettes or a spray foam and clean rags.
  - NOTE: This first method will generate very little liquid radwaste for easier clean up.
- 7.2.4 Further decontamination should be accomplished in accordance with Section 6 of this procedure.

7.2.5 Attachment 1 lists the equipment available from the Station Health Physics Monitoring Room for use at the Offsite Decontamination Center. Additional C&HP Tester Equipment, if required, is available upon approval by the Chemist and Health Physicist or his designee.

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NOTE: Equipment should be picked up by and accompany the assigned C&HP Tester(s) to the Decontamination Center.

HP 1604.01.3

#### OFFSITE DECONTAMINATION EQUIPMENT

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(Not all instruments will be required)

E-520 Survey Meter	l ea
PRM-4A with HP 210 Probe	1 ea
RM-14 with HP 260 Probe	l ea
E-400 with HP 270 Probe	l ea

Additional supplies that may be required and should be considered are as follows:

1. A special decontamination soap such as "Turco's Decon Hand Soap"

- 2. Soft brush
- 3. Mild hand soap
- 4. Cotton swabs
- 5. Gauze pads
- 6. Hair shampoo
- 7. Towels
- 8. Razors and shaving cream
- 9. Towelettes
- 10. Spray foam deconer

Attachment 1 Page 1 of 1

9 HP 1604.01.4

#### DAVIS-BESSE NUCLEAR POWER STATION PERSONNEL CONTAMINATION WORKSHEET

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Davis-Besse Nuclear Power Station

Unit No. 1

Health Physics Procedure HP 1604.02 Area and Equipment Decontamination

# NUCLEAR SAFETY RELATED

## Record of Approval and Changes

Prepared by Mi	chael P. Horne, Sr.	10/23/82
		Date
Submitted by	& W. Briden	10/29/82
	Section Head	Date
Recommended by	Ballsur	
	SRE Chairman	Date
QA Approved	NA	
	Quality Assurance Director	Date
Approved by	Douman	11/5/82
	Station Superintendent	Date

Revision	SRB		QA		Sta. Supt.	
No.	Recommendation	Date	Approved	Date	Approved	Date

#### 1. PURPOSE

The purpose of this procedure is to establish the guidelines necessary to perform decontamination (decon) activities in a safe and economic manner. This procedure discusses the methods and controls for decontaminating areas and equipment, providing for the protection of personnel and the environment against unwarranted exposure to radiation.

The contamination levels, relative and incidental costs of tools and equipment, and external exposure during decon, will be considered when selecting the process to perform decon activities.

#### 2. REFERENCES

- 2.1 AD 1844.05, Cleanliness Control
- 2.2 HP 1601.04, Radiation, Contamination, and Airborne Radioactivity Areas
- 2.3 HP 1601.05, ALARA
- 2.4 10 CFR 20, "Standards for Protection Against Radiation"
- 2.5 Davis-Besse Radiation Protection Manual
- 2.6 AEC Regulatory Guide 1.39, Housekeeping Requirements for Water-Cooled Nuclear Power Plants
- 2.7 U. S. Department of Health, Education, and Welfare Radiological Health Handbook
- 2.8 F.S.A.R., Section 17.2
- 2.9 Ultrasonic Cleaning Information. (Equipment File 3306-6/M20, Turco Products)
- 2.10 Chem & H.P. Library, Decontamination of Nuclear Reactors and Equipment - Author, J. A. Ayres
- 2.11 HP 1601.03, Radiation Exposure Permits

#### 3. EQUIPMENT NEEDED

- 3.1 Health Physics Contamination Monitoring Equipment
  - 3.1.1 Nuclear Measurements Corporation ASC-70 or ASC-75
  - 3.1.2 Eberline BC-4, RM-14, SAC-4, PRM-4a or PRM-5
  - 3.1.3 Nucon Smears
  - 3.1.4 Various Survey Maps

- 3.2 Protective Clothing as required to prevent personal contamination or spreading of contamination
- 3.3 Decon material
  - 3.3.1 Ultra-Sonic Cleaners
  - 3.3.2 Electro Deconing Unit
  - 3.3.3 Commercial deconing solutions: i.e., floor wax stripper, Turco, Unichem Decon Solution
  - 3.3.4 High pressure Freon spray booths
  - 3.3.5 High pressure water sprays
  - 3.3.6 Rags, paper towels, squeegees
  - 3.3.7 Spray bottles, mops, buckets, ringers, etc.
  - 3.3.8 Wire scrub brushes, putty knives
  - 3.3.9 Wet and dry vacuums
  - 3.3.10 Strippable paint and coatings, tape
  - 3.3.11 Other equipment as needed or approved by C&HP Management

#### 4. DATA SHEETS REQUIRED

4.1 Various survey maps and results of contamination surveys

#### 5. PRECAUTIONS AND SAFFTY

- 5.1 Decontamination should always be performed using all necessary precautions and protective clothing to prevent the spread of contamination or personal contamination.
- 5.2 Decontamination work should normally start at the lowest levels and work toward the higher contamination points.
- 5.3 Respiratory protection shall be required whenever there is a chance of an internal uptake of contamination, in the presence of Radioiodine at levels greater than 25% MPC, or when surface contamination approaches 100,000 d/m/100 cm2.
- 5.4 Decon equipment which is not a high cost item shall be disposed of when radiation levels become a source of exposure for workers, (about 1 R/hr).
- 5.5 Only C&HP approved cleaning agents may be used. Special precautions must be exercised to prevent their introduction into the RCS or its support systems.

- 5.6 When performing decon activities with a dry vacuum cleaner, a HEPA filter must be installed and working. This piece of equipment is not available for use in any area outside RACA.
- 5.7 HEPA Filters are disposed of when the differential pressure becomes excessive or when radiation levels exceed 1.0 R/hr at ½ inch from filter housing.
- 5.8 Contaminated areas will be identified by C&HP personnel. They will also post the areas as per HP 1601.04 Radiation, Contamination, and Airborne Radioactivity Areas.
- 5.9 The C&HP Foreman will advise the decon group on the preferred method of decon based on contamination levels and environmental conditions.
- 5.10 General and Special REP's will be used in accordance with the procedures for HP 1601.03 Radiation Exposure Permits.

#### 6. PROCEDURE

6.1 Methods of decontamination

The following steps are guidelines for decontaminating areas, equipment, and tools.

- 6.1.1 Decon with Dry Vacuum Cleaner
  - 6.1.1.1 Loose contaminated dust will be vacuumed with a vacuum cleaner equipped with a HEPA filter.
  - 6.1.1.2 Collected dust will be disposed of as solid radioactive waste as per SP 1104/28 Solid Radioactive Waste Disposal.
- 6.1.2 Decon with Wet Vacuum Cleaner
  - 6.1.2.1 The HEPA filter will be removed from the vacuum cleaner before it is used for the wet vacuum mode.
  - 6.1.2.2 If the area is not wet, it will be wetted down with available clean water.
  - 6.1.2.3 The contaminated area will be vacuumed with the wet vacuum cleaner, and the contents will be disposed of as liquid radioactive waste as per SP 1104.45 Station Drainage.
  - 6.1.3 Decon with Demin Water
    - 6.1.3.1 A water hose may be used for rinsing equipment utilizing demineralized water tap.
    - 6.1.3.2 The vertical surfaces are to be rinsed at an angle working from top to bottom to avoid recontamination.

NOTE: Care should be exercised when using a water hose to prevent airborne contamination.

- 6.1.3.3 A floor area will be mopped from outer contaminated area to an area floor drain. The floor drains inside RACA drain to the Miscellaneous Waste Drain Tank and are processed as radioactive waste per SP 1104.30 Miscellaneous Liquid Radioactive Waste.
- 6.1.3.4 The excess rinse water will then be removed with a mop, squeegee, wet vacuum cleaner, or absorbent material such as rags, blot paper, etc., and the floor will then be air dried.

#### 6.1.4 Decon with Chemicals

- 6.1.4.1 The area will be mopped down with demineralized water and a cleaning agent.
- 6.1.4.2 The chemicals will be applied in solution form to the contaminated area.
- 6.1.4.3 The contaminated area will be cleaned with the use of a mop, hand brush, or powered scrubber.
- 6.1.4.4 The contaminated liquid will be disposed of to the Miscellaneous Waste Drain Tank via area floor drain as per SP 1104.45 Station Drainage.
- 6.1.4.5 The contaminated area will be remopped with demin water.
- 6.1.5 Decon with Ultrasonic Cleaning
  - 6.1.5.1 Small parts, equipment, and tools may be cleaned by using the ultrasonic cleaner and following the procedure in the Ultrasonic Cleaning Equipment Instruction Manual. Contaminated wastes generated from ultrasonic cleaning will be disposed of to the Detergent Waste Drain Tank and processed as radioactive waste as per SP 1104.30 Miscellaneous Liquid Radioactive Waste.
- 6.1.6 Decon with High Pressure Freon
  - 6.1.6.1 High pressure Freon can be used on parts and tools in an enclosed container.
  - 6.1.6.2 Continued spraying will reduce contamination. Further reduction will require other methods.
    - NOTE: Filters in these units will have to be changed out periodically following manufactor's instructions for handling radioactive filters.

#### 6.1.7 Decon by High Pressure Jet Sprays

- NOTE: Will not normally be used because of the likelihood of creating a serious airborne problem.
- 6.1.7.1 A high pressure jet sprayer may be used to wash, chemical clean, and/or rinse a contaminated area utilizing demineralized water tap.
- 6.1.7.2 The vertical surfaces are to be sprayed at an angle working from top to bottom to avoid recontamination.
- 6.1.7.3 A floor area will be sprayed from the outer contamination area to an area floor drain. The floor drains inside RACA drain to the Miscellaneous Waste Drain Tank and are processed as radioactive waste per SP 1104.30 Miscellaneous Liquid Radioactive Waste.
- 6.1.7.4 The excess rinse water will then be removed with a mop, squeegee, wet vacuum cleaner, or absorbent material such as rags, blot paper, etc., and the floor will bhen be air dried.
- 6.1.8 Decon by Electro-Polishing
  - 6.1.8.1 Not used at Davis-Besse at this time and will be covered by a Health Physics Instruction when available.
- 6.2 Solvents and Chemicals for Decon Use
  - 6.2.1 Below is a list of solvents and chemicals available for use in deconning: (See Attachment 1)

HP 1604.02.0 Attachment 1 Page 1 of 2

# SOLVENTS AND CHEMICALS AVAILABLE FOR USE IN DECONNING

Designation	Form	Use	Approx pH as Used	Suggested Temp for Use <sup>o</sup> C( <sup>o</sup> F)	Suggested Applications
Viking Floor Wax Stripper	N/A	Stripper & Demin H20	N/A	All temps <212°F	Various strengths
Uni-Chem	N/A	Chemical Solvent plus Demin H20	N/A	All temps <212°F	Various strengths
		nemical Composition or Description			
Turco Decon 4182-A (high foam)	Powder	Mildly alkaline detergent	7.5	Ambient to boiling	Removal of contami- nation from cotton clothing, rubber articles, painted surfaces such as walls and vehicles.
Turco Decon 4324 (low foam)	Powder	Mildly alkaline detergent	7.5	Ambient to boiling	Same as above.
Turco Decon 4306-C and	Powder	Inhibited acidic material	1.2	65-90 (150-190)	Removal of activated corrosion products, fission products and fissile material from
4306-D				(150-212)	aluminum, stainless steel, carbon steel, and Zircaloy surfaces.
Turco Decon 4501-A	Liquid	Highly alkaline	13.5	115-120 (240-250)	Conditioning of tena- cious contamination on high-temperature alloys and stainless steel.
Turco Decon 4502	Powder	Highly alkaline; contains potassium permanganate. Inhibited to protect Stellites and Graphitar	14	95-100 (200-210)	Conditioning of con- taminated films on carbon steel and stainless steel sur- faces of equipment, pressurized water loops, fuel reprocess- ing equipment and reactor components.

HP 1604.02.0 Attachment 1 Page 2 of 2 .

	Chemical Composition		Approx pH	Suggested Temp for	Suggested
Designation	Form	or Description	as Used	Use °C(°F)	Applications
Turco Decon 4507	Powder	Alkaline rust remover with low chloride content	13.5	85-90 (185-195)	Removal of radioactive contaminated rust, carbon scale, paint, and oil.
Turco Decon 4509	Damp Powder	Disodium salt of EDTA, citric acid, synthetic nonionic	3.3	70-95 (160-200)	Decontamination of components removed from pressurized water reactors.
Turco Decon 4512-A	Liquíd	Inhibited phosphoric acid type reagent very low in fluorides and chlorides		60-65 (140-150)	Decontamination of carbon steel loops, reactor components, hand tools, and equip- ment. Also for removal of rust from ferrous surfaces.
Turco Decon 4513-A	Powder	Inhibited acidic material predomi- nantly sodium bisulfate	1.2	60-65 (140-150)	Decontamination of carbon steel loops, reactor components, hand tools, and equipment.
Turco Decon 4518	Powder	Inhibited acidic material predomi- nantly oxalic acid	1.3	85-95 (185-200)	Decontamination of loops, components, tools, and systems made of stainless steel and high temperature alloys.
Turco Decon SAC	Powder	Inhibited synthetic ammonium citrate, surfactants, soil redeposition retardants to promote greater efficiency	2.2	90-95 (190-200)	Suggested for use on stainless steel, carbon steel, Inconel, and Stellites.

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1.1

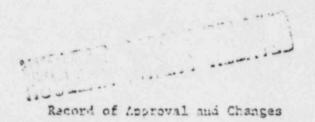
END

#### Davis-Besse Nuclear Power Station

#### Unit No. 1

ADMINISTRATIVE PROCEDURES AD 1827.01

Annual Radiation Emergency Medical Exercise



Prepared by	Bill Green	April 23, 1975
		Date
Submitted by	A. W. Briden	5/14/75
Recommended by	Jach Eum ER3 Chairman	5/20/75- P-Le
QA Approved	NA DWB Usnager of Quality Assurance	Date
Approved by	And Lun Station Suparintendent	5/00/75 Data
	1	

Revision No. 7	SAB Recommendation	uate 6/17/80	QA Approved N/F	Date	Sta. Supt. Approved	Dats 8/9/80
2	BREEN	9/2/ 50	NA		Formed	9/19/30
3	Amsing	3/20/82	NA		Tomung	4/2/82

#### 1. PURPOSE

The purpose of this procedure is to provide guidelines for the coordination of activities in the preparation, execution and critique of annual radiation emergency exercises.

1

2. APPLICABILITY

This procedure will be used by personnel having responsibility for conduct of emergency exercises with the off-site organizations providing emergency medical support to the nuclear power station.

- 3. REFERENCES
  - 3.1 Davis-Besse Nuclear Power Station Emergency Plan, Section 8.1.2, "Drills and Exercises"
  - 3.2 Davis-Besse Nuclear Power Station Emergency Plan
  - 3.3 AD 1827.02, "Medical Treatment of Injuries"
  - 3.4 HP 1604.01, "Personnel Decontamination"
  - 3.5 HP 1602.02, "Internal Personnel Monitoring"
  - 3.6 Emergency Implementing Procedures, EI 1300 series
  - 3.7 Magruder Memorial Hospital Procedure "Decontamination and Treatment of the Radioactively Contaminated Patient", Sections I, II, and III

#### PRECAUTIONS AND LIMITATIONS

All communications relating to an emergency medical exercise shall be unequivocally identified as a drill. Verbal communications shall be initiated and closed by the statement, "This is a drill".

5. PREREQUISITES

- 5.1 Agreement shall be obtained from the following individuals or organizations as to the time and sequence of an exercise.
  - 5.1.1 Station Superintendent
  - 5.1.2 Emergency Planning Supervisor
  - 5.1.3 REMS Corporation
- 5.2 A scenario shall be prepared and distributed by REMS

Corporation to the individuals and organizations identified in paragraphs 5.1.2 and 5.1.3 above. It shall describe a credible sequence of events from the time of accident occurrence until the accident victims have been transferred from the Radiation Emergency Area of the hospital to the uncontrolled area of the hospital and the Radiation Emergency Area has been restored to its original uncontaminated condition.

2

#### PROCEDURE

6.1 General

Coordination and general supervision of the annual radiation emergency medical exercise shall be provided by REM Corporation and the Toledo Edison Emergency Planning Group.

- 6.2 Preparation
  - 6.2.1 Annually REMS Corporation shall consult with the Emergency Planning and Preparedness Supervisor and select a date that is mutually convenient for the annual radiation emergency medical exercise.
  - 6.2.2 REMS Corporation shall initiate coordination of subsequent exercises NOT later than one week preceding the anniversary calendar quarter of the previous year's exercise.
  - 6.2.3 NOT less than two months prior to an exercise, REMS Corporation shall submit an exercise scenario to the Emergency Planning and Preparedness Supervisor for approval.
  - 6.2.4 Disclosure of the scenario beyond the parties supervising the exercise shall be restricted.
  - 6.2.5 Station personnel, and REMS Corporation shall present a training program to members of the Station Staff within approximately two weeks prior to the annual exercise.
  - 6.2.6 The Station training program referred to in paragraph 6.2.5shall include instruction relating to the references identified in paragraphs 3.1 through 3.6 above.
  - 6.2.7 The Lead Medical Coordinator and REMS Corporation shall present a training program to members of the Magruder Memorial Hospital and the Carroll

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3

Township Emergency Medical Service staff within approximately two weeks prior to the annual exercise.

6.2.8 The training referred to in paragraph 6.2.7 shall include instruction relating to the procedures identified in paragraphs 3.3 through 3.7 above.

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6.2.9 In accordance with agreements among the Station Superintendent, Emergency Planning Supervisor, Lead Medical Coordinator, the Magruder Memorial Hospital Administrator, and REMS Corporation, umpires for the exercise shall be appointed.

#### 6.3 Execution

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- 6.3.1 The time of initiation of the exercise shall be decided by the Emergency Planning and Preparedness Supervisor with concurrence of the Station Superintendent.
- 6.3.2 The participants shall exercise every aspect of the emergency plan and procedures as pertains to the problem unless specifically directed to exclude certain aspects.
- 6.3.3 Participants will inject as much realism into the exercise as is compatible with safe operations.
  - NOTE: Extreme care shall be exercised to assure that individuals receiving exercise communications and those who may overhear such communications, are <u>NOT</u> misled into belief that an emergency exists. The phase "This is a drill" shall be used at the start and finish of communications.
- 6.3.4 Simulation of time and/or the availability of supplies, instruments or equipment shall NOT be employed during the exercise.
- 6.3.5 Umpires shall be assigned in sufficient number and at locations to observe the responses of the participants.
- 6.4 Post-Exercise Critiques
  - 6.4.1 Post-exercise critiques shall be held at the Station and at Magruder Memorial Hospital by REMS Corporation.

6.4.2 The principal objectives of these critiques shall be evaluation of plans and procedures and evaluation of training, based on observations made during the exercise.

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- 6.4.3 Critique attendees shall be specified by senior officials of the respective institutions.
- 6.4.4 Minutes of the critiques shall be maintained.
- 6.4.5 Verbal comments by off-site personnel shall be confirmed by written reports to the Station Superintendent, Emergency Planning Supervisor, or the Administrator, Magruder Memorial Hospital, as applicable.

AD 1827.02

Davis-Besse Nuclear Power Station

Unit No. 1

Administrative Procedure AD 1827.02

Medical Treatment of Injuries

# NUCLEAR SAFETY RELATED

Record of Approval and Changes

Prepared by	Bob Peters	April 14, 1975		
		Date		
Submitted by	Terry D. Murray	6/9/75		
	Section Head	Date		
Recommended by	Jack Evans	7/8/75		
	SRB Chairman	Date		
QA Approved	NA/TM			
	Manager of Quality Assurance	Date		
Approved by	Jack Evans	7/8/75		
	Station Superintendent	Date		

Revision	SRB		APM		QA		Sta. Supt.	
No.	Recommendation	Date	Approved	Date	Approved	Date	Approved	Date
1	Jack Evans	1/13/76	NA		NA/TDM		Jack Evans	1/13/76
2	T. D. Murray	6/23/76	NA		NA/TDM		Jack Evans	6/29/76
3	T. D. Murray	4/5/77	NA		NA		Jack Evans	4/6/77
4	T. D. Murray	9/13/77	NA		NA /		Jack Evans	9/13/77
5	TO miney	3/7/78	. I amara	72.4	NA		TOmmay B2	\$ 3/3 /78
6	Bloge	2/27/79	NA		NA		Torian	3/9/29
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0		3/30/82			NA		TOMuno	7 4/2/82
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AD 1827.02.9

#### 1. PURPOSE

1.1 To list and describe the methods of treatment of injuries including radiation casualties.

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#### 2. REFERENCES

- 2.1 Davis-Besse Nuclear Power Station Emergency Plan
- 2.2 EI 1300.02, Unusual Event
- 2.3 Administrative Memorandum No. 5, Accident/Injuries -Reports and Forms
- 2.4 Administrative Memorandum No. 38, First Aid Team
- 2.5 HP 1604.01, Personnel Decontamination
- 2.6 Administrative Memorandum No. 37 ECS Pager and Telephone Numbers
- 3. SCOPE

- 3.1 Priority for medical treatment will depend on the severity of the injury and whether it has radiological aspects or NOT.
- 3.2 A minor injury is an injury that, in the estimation of a First Aid Team Leader, requires only First Aid Treatment.
- 3.3 A major injury is an injury that, in the estimation of a First Aid Team Leader, requires professional medical treatment.
- 3.4 The order of medical treatment will be:
  - 3.4.1 Care of major injuries
  - 3.4.2 Care of minor injuries
  - 3.4.3 Decontamination of personnel
  - 3.4.4 Monitor for Internal Contamination
  - 3.4.5 Definitive treatment and subsequent therapy as required.
- 3.5 The Davis-Besse Station has trained personnel and necessary equipment to respond to immediate First Aid requirements of injured personnel; in addition, the Medical Treatment Room on the 603' elevation of the Auxiliary

AD 1827.02.9

Building adjacent to the Control Room elevator has sufficient supplies and equipment to allow a physician to treat many injuries locally, if necessary.

2

- 3.6 First Aid Response Equipment in the form of First Aid Trauma Kit, First Aid Suitcase, splints, back boards, Resuscitator and stretcher are located in a cabinet inside the cafeteria on the Turbine Deck 623' level.
- 3.7 The First Aid Team consists of a First Aid Team Leader and First Aid Team members. First Aid Team Leaders hold a minimum of Red Cross Multi Media Certification while First Aid Team members have received First Aid Training. First Aid Team Leaders/Members are identified in Administrative Memorandum No. 38, First Aid Team.

#### 9 4. ACTIONS - WITHIN PROTECTED AREA

- 4.1 Actions of the injured person or any individual who discovers an injured person.
  - 4.1.1 Notify the Control Room of the nature, extent, and location of the injured person(s).
  - 4.1.2 Render life saving first aid as necessary.
  - 4.1.3 Keep the Control Room informed of the status of the injured individual(s).
  - 4.1.4 When the first aid team arrives, standby to assist the first aid team by:
    - 1. Assisting first aid team as requested.
    - 2. Maintaining communications with the Control Room.
- 4.2 Actions of Shift Supervisor/Assistant Shift Supervisor
  - NOTE: Transportation of contaminated injured individual(s) constitutes an Unusual Event and requires action per EI 1300.02, Unusual Event.
  - 4.2.1 Summon First Aid Team to the location of the injured person(s) by sounding the Initiate Emergency Procedures Alarm and announcing location and nature of emergency on the PA System. Unless the Shift Supervisor believes that additional help is necessary, all other personnol should be instructed to stand clear and that assembly according to the Emergency Plan is NOT required.

4.2.2 Request assistance from the Chemistry and Health Physics person in charge to determine if decontamination is needed.

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- 4.2.3 Call the Secondary Alarm Station Operator, who will make medical treatment arrangements as per Section 4.4. of this procedure (AD 1827.02).
  - NOTE: If the event S.A.S. is unavailable to make medical treatment arrangements, the Central Alarm Station Operator should be notified to make necessary arrangements.
- 4.2.4 Contact the Davis-Besse Station Medical Coordinator when the moving of an injured victim(s) may be life threatening or professional medical advise is requested by the First Aid Team Leader. (Reference Administrative Memo No. 37, Attachment XI for designated Medical Coordinators.)
  - NOTE: If contact with the Medical Coordinator cannot be made, contact the Magruder Hospital, 24 hour Emergency Room Doctor and relate accident and injury information.
- 4.2.5 Ensure that Security and the First Aid Team are notified of the impending ambulance arrival and give necessary instructions (i.e. access door, number of ambulances responding).
- 4.2.6 Send a can to the Gate Office (P.P.F.) to direct the ambulance.
- 4.2.7 Notify the Station Superintendent and the Chemist and Health Physicist.
- 4.2.8 The Station Superintendent or his designated representative will arrange for notification of the injured person(s) family.
  - NOTE: Some member of Station Supervision will accompany the man to the doctor or hospital. If the injury occurs during off normal hours, weekends or holidays, then a member of Supervision will be called to meet the employee at the doctor's office or hospital.

4.3 Actions of the First Aid Team

AD 1827.02.9

- 4.3.1 Proceed immediately to the injured individual(s) with the First Aid Response Equipment.
- 4.3.2 Evaluate the extent of the injury and render First Aid as required.

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- 4.3.3 Keep the Shift Supervisor assessed as to the status and degree of injury to person(s) involved.
- 4.3.4 The First Aid Team Leader shall use the following criteria in determining where and when to move the injured person(s).
  - If in his estimation, the injured person(s) should NOT be moved without Professional Medical Care, First Aid will be provided locally until Professional Medical treatment is available.
  - If the injured person(s) requires immediate professional medical treatment and may be moved, he will direct the transportation of the injured person(s) to the nearest 585' elevation exit for ambulance pickup.
  - 3. If the injured person(s) does (do) NOT require immediate professional medical treatment, then:
    - a. Contaminated injured person(s) may be taken to the Medical Treatment Room and/or Decon Room for decontamination and further First Aid and/or Professional Medical Treatment.
    - b. Uncontaminated injured person(s) may be taken to the Medical Treatment Room for further First Aid and/or Professional Medical Treatment.

Actions of the Secondary Alarm Station Operator (S.A.S.)

4.4

- 4.4.1 Contact the Carroll Twp. Emergency Medical Service (Ambulance) through the Ottawa County Sheriffs Office and relate the extent of known injuries. Refer to Administrative Memo 37, Section XI.
  - NOTE: Mid-County EMS (Ambulance) or Lift Flight Air Ambulance should be considered when backup ambulance support is required.

Refer to Administrative Memo 37, Section XI for Mid-County EMS, or Attachment 2 of this procedure for Life Flight Air Ambulance.

4.4.2 Contact the H.B. Magruder Hospital, Nursing Supervisor to inform her of the extent of injuries and the impending ambulance arrival. Refer to Administrative Memo 37, Seciton XI.

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- NOTE: St. Charles Hospital has been designated as backup hospital support with the capabilities for care in the event of radiological emergencies. Refer to Administrative Memo 37, Section XI.
- 4.4.3 Contact the Edison Operator giving the injured individuals name and the nature of the injury. The Edison Operator will notify the individuals Supervisor, the Safety and Health Services Administrator and the Station Safety Coordinator.
- 4.5 Actions of the Chemistry and Radiation Tester (C&RT)
  - 4.5.1 Proceed immediately to the scene of the accident.
  - 4.5.2 Check area dose rate.
    - a. If greater than 25 R/hr., the First Aid Team should more the injured party from the area as soon as possible or set up shielding to reduce exposure.
    - b. If less than 25 R/hr., Do Not move the party until approved by the First Air Team Leader.
    - c. If an airborne or surface contamination hazard exists, inform the First Aid Team Leader than the victim should be moved as soon as feasible.

NOTE :

Dose rate of 25 R/hr is recommended by the Station Medical Consultant, REMS Corporation.

#### 5. ACTIONS - OUTSIDE PROTECTED AREA

- 5.1 Actions of the injured person or any individual who discovers an injured person.
  - 5.1.1 Notify the Secondary Alarm Station Operator of the nature, extent and location of the injured person(s).

AD 1827.02.9

5.1.2 Render lift saving first aid as necessary.

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- 5.1.3 When the first aid team or ambulance arrives, stand by to assist the first aid team as required.
- 5.2 Actions of the Secondary Alarm Station Operator
  - 5.2.1 Contact the Carroll Twp. Emergency Medical Service (Ambulance) through the Ottawa County Sheriffs Office and relate the extent of known injuries. Refer to Administrative Memo 37, Section XI.
    - NOTE: Mid-County EMS (Ambulance) or Lift Flight Air Ambulance should be considered when back up ambulance support is required. Refer to Administrative Memo 37, Section XI for Mid-County EMS or Attachment 2 of this procedure for Lift Flight Air Ambulance.
  - 5.2.2 Contact the Edison Operator giving the injured individuals name and the nature of the injury. The Edison Operator will notify the individuals Supervisor, the Safety and Health Services Administrator and the Station Safety Coordinator.
- 6. DISCUSSION

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- 6.1 Minor injuries
  - 6.1.1 Move injured person(s), for injuries NOT requiring immediate professional medical treatment, to the Medical Treatment Room, taking care to minimize aggravating the person's condition. The Medical Treatment Room is located on the 603' elevation of the Auxiliary Building adjacent to Access Control. Immediate and temporary care may be given to a victim of an accident at this point.

6.2 Major injuries

- 6.2.1 In cases involving major injuries (except Section 6.2.2) transportation of injured personnel should be the Magruder Hospital (Port Clinton, Ohio) or Megruders designated back-up facility, St. Charles Hospital (Oregon, Ohio).
- 6.2.2 In cases of severe burns, severe eye injuries, uncontrolled bleeding or heart attacks, transportation of injured person(s) should be to St. Vincents

Hospital. This can be done by the use of Life Flight-Emergency Air Ambulance Service (see Attachment 2).

#### 6.3 Radiological

6.3.1 If the injury involves contamination, all efforts will be made to decontaminate the injured to below 220 dpm/100 cm<sub>2</sub>. If decontamination delays necessary medical treatment, the victim will be covered in such a manner as to avoid any spread of contamination and appropriately shielded until medical aid can be obtained or hospitalization made.

- 6.3.2 Remove protective clothing and begin decontamination according to HP 1604.01, Personnel Decontamination, if required and only if this will NOT aggravate the injury.
- 6.3.3 For minor injuries personnel decontamination may be accomplished in the Personnel Decontamination Area located in the Auxiliary Building. This area contains showers, a large sink, wash basin, and necessary monitoring equipment.
- 6.3.4 In case of injury, both minor and major, medical attention should take precedence over contamination controls. Emergency medical treatment of inhalation cases should take precedence over decontamination and/or wound treatment. In the event of any minor open wound in the RACA, the wound will be flushed with copious amounts of water and bleeding will be controlled as required. In cases of a puncture wound, forcing it to bleed will remove some contamination if present.
  - NOTE: Transportation of contaminated injured individual(s) constitutes an Unusual Event and requires actions per EI 1300.02, Unusual Event.
- 6.3.5 When hospitalization is required and contamination or its possibility exists, the ambulance driver, hospital and doctor shall be advised in advance. Precautionary measures to prevent spread of contamination shall be initiated, i.e., placing injured person on a cloth sheet and shielding him if required, providing the ambulance driver with TLD, dosimeter and protective clothing as required.

6.3.6 For each injury involving radiological complications, the C&RT individual shall complete a Body Map, Attachment 1. Should the injured individual require transport to an off-site medical facility, the Body Map shall accompany the individual to expedite recovery actions at the facility.

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- 6.3.7 Should hospitalization be required, one Health Physics Technician shall accompany the individual in the ambulance to the hospital. Should enough casualty victims exist which require more than one ambulance, only one Health Physics Technician is required. The Technician shall accompany the first injured individual transported and wait at the hospital to provide radiological assistance as the other casualties arrive.
  - NOTE: During off normal working hours, Health Physics Technicians should be cognizant of shift manning requirements. Contact should be made with the Chemistry and health Physicist or his alternate, to obtain additional assistance.
- 6.3.8 Urinary bio-assay or whole body counts will be performed on all persons suspected of having received 10% of the maximum permissible body burden.

#### 7. REPORTS

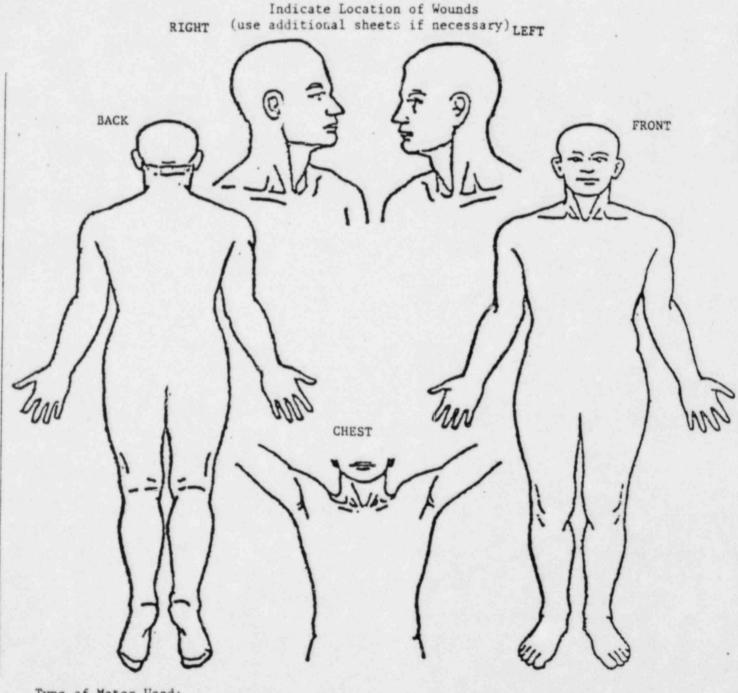
7.1

Reports of accidents and injuries shall be completed and processed in accordance with Administrative Memorandum No. 5, Accident/Injuries - Report and Forms.

# BODY MAP

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Indicate Contaminated Areas as to Location, Degree of Contamination, and Decon Effort



in.

Type of Meter Used: (indicate model and number)

Distance Skin-to-Probe:

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Attachment 1 Page 1 of 1

AD 1827.02.9

#### PROCEDURES FOR THE USE OF LIFE FLIGHT -EMERGENCY AIR AMBULANCE SERVICE

10

CONTENTS	ATTA	CHr	IENT I	PAGE NO.
Background Information			Page	1
Procedure to Follow Actions to Initiate Service	• •		Page	2
Instructions for Secondary Alarm Station Operator			Page	3
Safety Rules for establishing and marking landing sit	ce.		Page	3 - 5

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Life Flight, (an Emergency Room in a helicopter), rapidly transports a St. Vincent emergency physician, specialized registered nurse, life support medications and supplies to any medical emergency scene within a 130 mile radius of Toledo.

(for Security Supervisors)

Life Flight transports the patient to the most appropriate hospital or hospital of choice, (Physician referrals are honored).

Medical treatment is begun at the scene, continued in flight, and the receiving hospital is alerted to the nature and severity of the injury or illness, and medical specialties needed.

Life Flight was initiated in coordination with the Regional Medical Services of Northwest Ohio (REMSNO). It augments existing primary ground emergency transportation systems and provides service 24 hours a day, seven days a week.

Since Life Flight is a self-contained emergency treatment center, it can carry a maximum of two adult patients at a time.

Most appropriately, <u>utilization of this service at the Davis-Besse Nuclear</u> <u>Power Station should be limited to severe injuries and illnesses or treat-</u> <u>ment cases best suited to the use of available specialty service of St.</u> <u>Vincent's, (i.e., heart attacks or suspected heart attacks, eye injuries,</u> <u>burns, etc.).</u>

However, designation of particular care facility, will be determined through contact with the Shift Supervisor.

To Call Life Flight: (419) 241-5433 is the emergency number; the call is received simultaneously by REMSNO and Life Flight Communications Center.

PLEASE NOTE: <u>Contact must be made through the Secondary Alarm Station</u> <u>Operator</u> (the phone number is shown here only for informational purposes and as an alternative measure, should contact with the Secondary Alarm Station Operator be unworkable).

> Attachment 2 Page 1 of 5

PROCEDURES TO FOLLOW . . . ACTIONS TO INITIATE SERVICE:

- The Shift Supervisor or his designee will contact the Secondary Alarm Station Operator and detail the following information which will be passed along to the Life Flight Dispatcher.
  - This is <u>(your name & position)</u> calling from Davis-Besse, I am requesting that you call: 241-5433, to establish "Life Flight" Emergency Air Ambulance Service. Please provide the following information to the Life Flight Dispatcher:
    - A. Type and extent of injuries . . .
    - B. <u>Call-back telephone number</u> . . . 259-5663, D-B Control Room (for contact through Shift Supervisor with First Aid Team Leader)
    - C. Probable landing site/landing instructions . . .
    - D. Patient's name and expected destination . . .
    - E. Hold on the line until the S.A.S. Operator tells you to hang up
    - Notify the Control Room that ext. 5663 must be kept open for possible incoming emergency information call.
  - Request the Nuclear Security Supervisor to establish and mark landing area and to follow Safety Rules (attached to this procedure).
  - 4. Inform First Aid Team Leader that arrangements have been made and help is on the way . . . (This is extremely important to NOT only keep him informed but to enable him to comfort and reassure the injured).
  - 5. Ensure that a First Aid Team member or Operations person is designated to meet Life Flight and take medical personnel to the injured.
    - 6. N

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Note arrival and departure times of Life Flight Service.

Attachment 2 Page 2 of 5 9 INSTRUCTIONS FOR THE SECONDARY ALARM STATION OPERATOR TO INITIATE LIFE FLIGHT AIR AMBULANCE SERVICE

Upon receiving request from the field for this service, make certain that you obtain the following information to pass along to the Life Flight Dispatcher:

-	1.	Caller's name, phone number, and location
		Phone
		Location
		Time In
-	2.	Type and extent of injuries or illness
1	3.	Call-back telephone number (for D.B.: 259-5663 Control Room).
-	4.	Address, cross streets, nearby landmarks, and nearest landing site
· · ·	5.	REPEAT INFORMATION BACK TO CALLER TO VERIFY ACCURACY.
	6.	INFORMATION COMPLETE? Yes! Tell caller to hang up. No! Tell caller to hold on.
-	7.	Call 241-5433, (the call is received simultaneously by REMSNO and the Life Flight Communications Center).
	8.	Repeat information written above. Time Out
÷ _	9.	Follow normal, established procedures.

SAFETY RULES: (For Davis-Besse Security Force Supervisors) . . . For establishing and marking LIFE FLIGHT landing site and general precautions concerning aircraft.

9

A vital part of the total information supplied to the Life Flight Dispatcher is the - address, cross streets, nearby landmarks, and nearest landing site.

> Attachment 2 Page 3 of 5

1

Due to plant architecture, our cooling tower provides an obvious and convenient "landmark of address".

However, we must remember that the landing site for Life Flight has some definite requirements:

"The site must be 60 feet square and free of rubbish and overhead obstructions."

The On-Duty Nuclear Security Supervisor will:

- Select an appropriate landing area; 1.
- Direct Station Security Personnel to mark the land-2. ing site; and
  - 3. Arrange a rapid transport of medical personnel to the injury scene.

to ensure -- the safety of the aircraft and its personnel; prompt treatment for the injured; and security control of landing activities.

(night).

X

#### LANDING SITE

91

LANDING SITE MARKINGS

WIND DIRECTION

wind direction.

60 foot square, clear of trees, Mark landing site in each wires, emergency vehicles, trash cans, signs, fallen branches, and snow. (100 foot square needed when high winds are a factor).

Surface should be as smooth as possible with no more than 14 foot difference in elevation from one end of the landing site to the other.

Crowds must be kept back 100 feet from the helicopter at all times.

#### GENERAL SAFETY PRECAUTIONS

1. Approaching Aircraft:

Always approach the aircraft from the front.

Never approach the aircraft until signaled to do so by the pilot.

Station one smoke corner with smoke bombs bomb (daylight or (daylight) or flares flare (night) on the upward side of the landing site to introduce

X 60 ft.

Х Х

AD 1827.02.9

Never approach aircraft when blades are in motion.

14

At no time is anyone permitted near the tail of the aircraft.

No smoking within 50 feet of the aircraft.

No running within 50 feet of the aircraft.

Do NOT assist crew members in opening or closing doors of the aircraft.

2. Loading or Unloading:

9

Flight crew is responsible for loading and unloading equipment.

Flight crew will direct loading and unloading of patient.

When Aircraft Has Landed . . . There should only be three people aboard. The Life Flight Crew consists of - physician, nurse, and pilot.

The Shift Supervisor or his designee shall have an escort, at the landing site, to direct medical personnel to the injured.

If the pilot elects to remain at the aircraft, a Security Officer will stay with him, at all times.

<u>Prior To Departure</u>... Security personnel shall make certain that the injured's badge and TLD are NOT on the injured and have been turned over to the Nuclear Security Supervisor. Clear area of take off. Note time of departure and record.

Attachment 2 Page 5 of 5

END

Davis-Besse Nuclear Power Station

Unit No. 1

Administrative Procedure AD 1827.04

Overexposure/Internal Contamination

NUCLEAR SAFETY RELATED

Prepared by C. Doyel/W. Green	<u>1/13/76</u> Date
Submitted by D. W. Briden	2/18/7
Recommended by And Fund	Bate 3/2/70
SRB Chairman	Date 3-16.74
QA Approved . D. Zuranon (C-) Manager of Quality Assurance	Date
Approved by	

Record of Approval and Changes

Date Approved Date Approved 1/29/80 A Loud 3-12-00 Torung Revision SRB No. Recommendation Date 3/15/80 1 many 7/13/82 CJDatt/efg7/24/12 TOM 37/27/12 2

# 1. PURPOSE

To describe the actions necessary to investigate, treat and report the overexposure of an individual at Davis-Besse Nuclear Power Station (DBNPS) due to radiation. Overexposure is defined as any internal or external radiation exposure where the whole body dose is in excess of permissable limits set forth in 10 CFR 20.

# 2. REFERENCES

- 2.1 10 CFR 20, "Standards for Protection Against Radiation"
- 2.2 Davis-Besse Station Radiation Protection Manual
- 2.3 AD 1842.00, "Chemistry and Health Physics"
- 2.4 FSAR Section 12
- 2.5 HP 1602.01, "External Personnel Radiation Monitoring"
- 2.6 HP 1605.06, "Whole Body Counting"
- 2.7 AD 1807.00, "Control of Conditions Adverse to Quality"
- 2.8 AD 1804.00, "Report Management
- 2.9 TECo NQAM

#### 3. RESPONSIBILITIES

2

3.1 General

Each person who works at or visits the DBNPS site shall be responsible for complying with the requirements of AD 1842.00, "Chemistry and Health Physics" for personnel radiation exposure. Should any person suspect that he has been subjected to overexposure, he shall immediately notify a member of the Chemistry and Health Physics Section.

- 3.2 Chemist and Health Physicist
  - 3.2.1 Conduct final overexposure investigation if indeed it is determined by Health Physics personnel that an overexposure did occur.
  - 3.2.2 Complete "Report of Overexposure Investigation", (Enclosure 1).
  - 3.2.3 Submit applicable reports to the NRC as defined in 10 CFR 20.403, 20.405(a), and 20.405(b).

3.2.4 Initiate an Action Item Report if required in accordance with AD 1807.00, "Control of Conditions Adverse to Quality".

2

3.3 Chemistry and Health Physics Section

Conduct the initial investigation of reports of overexposure to verify the incident and determine the need for further action and investigation as directed by the Chemist-Health Physicist.

#### PROCEDURE

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- 4.1 External Exposure
  - 4.1.1 An over-external exposure is defined when it is known or suspected that an individual has been exposed in excess of the limits specified by 10 CFR 20.101, an immediate investigation will be conducted by Chemistry-Health Physics Section personnel and such reports or notifications as required by 10 CFR 20 will be submitted.

If an exposure comes within the definition of 10 CFR 20.403(a), the Station Superintendent will contact the company's radiation medical emergency consultant for their recommendations.

- 4.1.2 Routine external radiation monitoring (which will be the indicator that an overexposure has occurred) is described in HP 1602.01, External Personnel Radiation Monitoring Program.
- 4.2 Internal Exposure
  - 4.2.1 If an over-exposure resulting from internal contamination is known or suspected in excess of the limits specified by 10 CFR 20.103, an investigation will be conducted in accordance with HP 1605.06.
    - The services of the company's radiation medical emergency consultant may be utilized to determine the magnitude of any excessive exposure, its cause, and effective preventive measures.
    - If the amount of radioactive material in the body exceeds 10% MPOB, a dose assessment should be performed.

- 3. If there is a reasonable probability that any individual incurred an internal deposition of one or more radionuclides exceeding 520 MPC-hours the Station Superintendent will contact the company's radiation medical emergency consultant for their recommendations.
- 4.2.2 Routine internal monitoring of contamination, (which will detect if an over-exposure resulting from internal contamination has occurred) will be performed as described below.

3

#### Whole Body Councing

- Yearly whole body counts will be taken on selected station personnel.
- Selection of the individuals for whole body counting shall include at least 25% of the personnel assigned to the station.
- Criteria used for selecting individuals will be quarterly whole body exposure records and work history in airborne radioactivity areas.

#### Tritium Monitoring

- Urinalyses for tritium will be performed for selected station personnel.
- On a quarterly basis, a bioassay for tritium will be collected from individuals who have been working in areas where there could be a potential for inhaling tritium.
  - NOTE: During periods when the Refueling Canal is filled, urine samples for tritium should be collected from selected individuals every two (2) weeks.

#### 4.3 Records

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4.3.1 If the limits specified in 10 CFR 20.403, .405, have been or are likely to be reached, the Region III Director of the NRC shall be notified. 4.3.2 The Chemist & Health Physicist shall be responsible for initiating the Report of Over-Exposure form.

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5 AD 1827.04.0

REPORT OF OVEREXPOSURE

(Over-exposure re	sulting from	internal	or	external	radiation	exposure)
-------------------	--------------	----------	----	----------	-----------	-----------

Name		Date
		tle
Location Exposure Occurred_		
REP No		
Type of Work or Operation at	: Time of Expo	sure
How did Exposure Occur		
Why did Exposure Occur		
Was Employee Injured Yes		escribe
Medical Treatment Required		
Damage to Equipment		
Type of Exposure Involved:		
Whole Body	Other	
Skin		
Hands & Forearms		
Feet & Ankles		
Internal		
Survey of Exposure Location:	By	Title
Gen. BkgdmR/hr	Hot Spot(	s)mR/hr

Enclosure 1 Sheet 1 of 3

			6	AD 1827.04.0
Air Activity	µCi/cc	Hot Spot(s)		mR/hr
Contamination: Su	rface	dpm	/100 cm <sup>2</sup>	
Dosimeters Reading	S	mR-	Ser#	
		mR-	Ser#	
Evaluation of TLD:	Beta	mR		
	Gamma	mR		
	Beta & Gamma_	mR		
Neutron Exposure				
Were Nasal Swipes	laken	Results		
Was Sputum Analyze	d	Results		
Was Whole Body Cour	nter Utilized_		(Attach	scan to this report
Bioassay Program Be				
Final Disposition:				
Did overexposure of	ccur Yes	No (	If yes, in	itiate NCR)
Total Dose Assigned	d for Period		to	
Whole Body (Externa	al)	(In	ternal)	
Skin	E:	xtremities_		Other
Future Radiation E:	kposure Limita	tions		
Future Clinical Rad	diation Data Re	equired		
From Title 10 CFR 20.403 and 20.405 Compliance Required	- is an NRC not	for Protect	ion Agains and report	t Radiation"; to Regional
	Yes		No	

Enclosure 1 Sheet 2 of 3

AD 1827.04.2

Has 520 MPC-hours in a 13 week period been exceeded?

Yes No

If the answer to either of the above questions is yes, contact the company's radiation medical emergency consultant, and complete report NP-02 as required in accordance with AD 1804.00, "Reports Management".

NRC Region III Telephone (Days, Nights, Sundays & Holidays) - 312-858-2660

7

Who made telephone call \_\_\_\_\_ Time \_\_\_\_ Date \_\_\_\_\_

To whom call was made \_\_\_\_\_ Capacity \_\_\_\_\_

Date and Time of Telegram Confirmation

To whom telegram sent Capacity

Date and Time 30 day written report mailed

To whom report sent \_\_\_\_\_ Capacity \_\_\_\_\_

Was report Mailed Registered Return Receipt?

(Attach copy of report, telegram statement, and phone conversation to this investigation.)

Signatures of Personnel Making Investigation:

Name	Title	Date
Name	Title	Date
Name	Title	Date
Chemistry & Health Physicist_	Signature	Date
Station Superintendent	Signature	Date

Enclosure 1

END Sheet 3 of 3

AD 1827.05

Davis-Besse Nuclear Power Station

Unit No. 1

Administrative Procedure AD 1827.05

Explosion

NUCLEAR SAFETY RELATED

Record of Approval and Changes

Prepared by	yR. P. Wathen/1	V. H. Green			Feb. 6 Dat	. 1976 te
Submitted 1	by A.W.B	Section			And a state of the	23/76 te
Recommende	d by Add	SRB Chai	2		Da	123176
QA Approve	d NA DU	B er of quali	ty Assurance	2	Da	te
Approved by		Puur ation Super	and the second second second second		Da	123/76 te
	/					
Revision No.	SRB Recommendation		QA Approved		a. Supt.	Date
2	Brilley	4/5177 6/17/80	COP	8-12-00 T	oning	8/16/20

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#### 1. PURFOSE & SCOPE

This procedure describes the emergency actions to be performed by station personnel in the event of an explosion at the Davis-Besse Nuclear Power Station.

1

2. REFERENCES

2.1 AD 1804.00, "Reports Management"

2.2 Davis-Besse Nuclear Power Station Emergency Plan

2.3 EI 1300.02, Unusual Event

2.4 EI 1300.03, Alert

#### 3. SYMPTOMS

- 3.1 Any explosion witnessed by any individual or group or otherwise determined to have occurred.
- 3.2 High radiation alarms from the radiation monitoring system following release of radioactivity due to the explosion or explosive effects.
- 3.3 Fire alarm due to fire created by explosion or due to damage to smoke/heat sensors and/or fire protection piping (e.g., low pressure signal actuating fire alarm).

#### 4. IMMEDIATE ACTIONS

- 4.1 An onsite explosion constitutes an Unusual Event and requires actions be taken per Unusual Event, EI 1300.02.
- 4.2 An onsite explosion affecting plant operations constitutes an Alert classification and requires actions be taken per Alert, EI 1300.03.
- 4.3 Immediately following the determination that an explosion occurred, the Shift Supervisor shall direct a search of the effected area for injured personnel and also, the Shift Supervisor or other licensed operator shall conduct a physical examination of all affected areas with particular attention to the following systems as appropriate:
  - Engineered Safety Features, and Borated Water Storage Tank
  - 2. Radwaste including makeup and purification and Boric Acid Storage Tanks with their associated piping

2

- 3. Component cooling and service water
- 4. Spent fuel pool and new fuel storage
- 5. Containment building and penetrations
- 6. Nuclear steam supply system
- 7. Gas decay tanks

An explosion could cause tank leaks, pipe whip damage, equipment or component failure and structure damage.

2

The primary concerns are for injured personnel and to detect, if any of the aforementioned damage has occurred and has compromised containment integrity, ESF functions and ESF equipment, or if any damage has occurred that could lead to the release of radionuclides. Once this has been determined, the possibility of damage to the station shall be investigated.

4.4

2

The Station Superintendent shall notify the NRC in accordance with AD 1804.00, "Reports Management", if after the initial investigation sabotage is suspected or confirmed.

AD 1827.06 (Supersedes EP 1202.38)

Davis-Besse Nuclear Power Station

Unit No. 1

ADMINISTRATIVE PROCEDURE AD 1827.06

Tornado

Record of Approval and Changes

Prepared by Bill Green	12/20/75
	Date
Submitted by Tengo Mennay	12/29/75
Section Head	Date
Recommended by All Lalmus	1/13/76
SRB Chairman	Date
QA Approved And	11-2-77
Manager of Quality Assurance	Date
Approved by And leun	1/13/76
Station Superintendent	Date
Revision SRB OA Sta	Sunt

Revision	SKB		QA		Sta. Supt.	
No.	Recommendation	Date	Approved,	Date	Approved	Date
1	Belleve-	6/17/80	CS F	3-12-8=	TOMUM	8/10/80
2	Recommendation	9/4/81	E Jelifilet	20/0/51	Lowing	9/10/81

# 1. SYMPTOMS

Load Dispatcher notifies Davis-Besse Station that a tornado watch or a tornado warning exists for the vicinity of the Davis-Besse Station.

- 1.1 Tornado Watch
  - 1.1.1 Meteorological conditions are favorable for the formation of a tornado.

1

1.2 Tornado Warning

1.2.1 A tornado has been sighted in the vicinity of the Davis-Besse Station.

# 2. REFERENCES

- 2.1 Davis-Besse Nuclear Power Station Emergency Plan
- 2.2 EI-1300 series, Emergency Implementing Procedures

# 2 3. AUTOMATIC ACTION

None

#### 2 4. IMMEDIATE OPERATOR ACTION

- 4.1 Load Dispatcher
  - 4.1.1 Keep the Davis-Besse Station informed until tornado conditions have abated.
- 4.2 Control Room Operators
  - 4.2.1 Notify the Shift Supervisor if a tornado watch or tornado warning is received.
  - 4.2.2 Monitor the control boards to determine any effects on instrumentation, controls or station operations.
- 4.3 Shift Supervisor
  - NOTE: Check Emergency Plan Activation, EI 1300.01, to determine proper emergency classification and take actions accordingly.
  - 4.3.1 Tornado Watch

1. Assign station personnel to look and listen

for a tornado and to report any sightings to the Control Room.

- 4.3.2 Tornado Warning
  - 1. Order all fuel handling operations suspended

2

- If fuel is being supported from a crane or a bridge, order that it is to be stowed in a secure place
- If plant is in power operation, instruct station personnel to standby to prepare for emergency shutdown
- Order all non-essential station operations halted
- 5. Order the diesel generators started and prepare for loading
- Notify the Station Superintendent and/or the Operations Engineer.
- 5. SUPPLEMENTARY ACTIONS

None

6. DISCUSSION

2

- 6.1 Meteorological conditions that could result in a tornado would be determined by the Weather Bureau.
- 6.2 Weather Bureau services are available to the TECo Load Dispatcher through a teletype.
- 6.3 TECo also maintains a radar weather surveillance system covering a 64 mile radius of Toledo.
- 6.4 The plant should be prepared in such a way to mitigate the consequences of tornado damage. The Shift Supervisor, in the absence of the Station Superintendent, shall take on the additional measures he feels necessary to protect the station and the public.

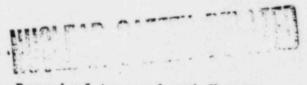
AD 1827.07 (Supersedes EP 1202.42) -

Davis-Besse Nuclear Power Station

Unit No. 1

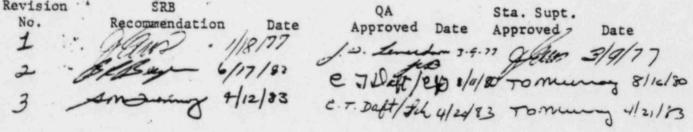
ADMINISTRATIVE PROCEDURE AD 1827.07

Earthquake Emergency Procedure



Record of Approval and Changes

Prepared by Bill Green	12/20/75
	Date
Submitted by Teng D'Munay	12/29/25
Recommended by	Date 1/13/76
" SRB Chairman	Date
QA Approved Manager, of Guality Assurance	Date
Approved by Act Mus	1/13/76
Station Superintendent	Date
Development from the	



#### 1. SYMPTOMS

1.1 Station Seismic/Instrumentation alarm in the control room on the Reactor and Station Auxiliaries panel.

1

1.2 Tremor indicating an earthquake.

# 2. REFERENCES

- 2.1 Davis-Besse Nuclear Power Station Emergency Plan
- 2.2 EI 1300 series, Emergency Implementing Procedures
- 2.3 10 CFR 100, Appendix A
- 2.4 TECo NQAM
- 2.5 DB Tech. Spec. 6.9
- 2.6 AD 1807.00 Control of Conditions Adverse to Quality
- 3. AUTOMATIC ACTIONS

3

3

3.1 The Strong Motion Recording System and Seismic Monitoring Equipment is actuated and records the seismic disturbances.

# 4. IMMEDIATE OPERATOR ACTION

- 4.1 Control Room Operators
  - 4.1.1 Check the control boards to determine the effect, if any, on instrumentation, controls or station operations.
  - 4.1.2 Notify the Shift Supervisor.
  - 4.1.3 Pay particular attention to sump level alarms and tank levels.
  - 4.1.4 If the unit has been shutdown by automatic protection systems, place the unit in a safe shutdown condition.

# 4.2 Shift Supervisor

- 4.2.1 Assign personnel to verify the authenticity of the Station Seismic/Instrumentation Alarm. If the Seismic System is inoperable, contact the Technical Engineer for further guidance.
- 4.2.2 Order all fuel handling operations suspended.

4.2.3 If fuel is being supported from a crane or a bridge, order that it be stowed in a secure place.

2

- 4.2.4 Control rod position, reactor power, and other pertinent variables shall be evaluated to verify that no change has occurred in core reactivity.
- 4.2.5 Verify that there is no abnormal sump operation and tank levels are stable.
- 4.2.6 Check Emergency Plan Activation, EI 1300.01 to determine proper emergency classification and take actions accordingly.

# 5. SUPPLEMENTARY ACTION

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- 5.1 Operating Personnel
  - 5.1.1 Perform RCS leak test (ST 5042.01)
  - 5.1.2 Exercise control rods (ST 5013.04)
  - 5.1.3 Perform Diesel Generator test (ST 5081.01)
  - 5.1.4 Carry out Section 9 of SP 1105.17, Seismic Monitoring Systems. Section 9 provides an analysis of the graphic recording, determination if OBE earthquake has been exceeded, and the requirement to shutdown the Unit if OBE has been exceeded.

#### 5.2 Shift Supervisor

- 5.2.1 If the unit has NOT been shutdown and no apparent damage has occurred, maintain the station in its present status.
- 5.2.2 Order a physical inspection of the station with particular attention to the following systems:
  - Engineered Safety Features and Borated Water Storage Tank
  - Radwaste including makeup and purification, and Boric Acid Storage Tanks with their associated piping
  - 3. Component cooling
  - 4. Spent fuel pool and new fuel storage

- 3
- 5. Containment boundary
- 6. Nuclear Steam Supply System
- 5.2.3 Notify the Station Superintendent and/or the Operations Engineer.
- 5.3 Station Superintendent

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- 5.3.1 Notify Company Management
- 5.3.2 Notify the NRC in accordance with AD 1807.00, Control of Conditions Adverse to Quality
- 5.3.3 With the assistance of the plant operating staff and staff personnel, convene the SRB to evaluate the subsequent reports, records, and recordings for any possible damages to the equipment and structures caused by the earthquake and determine if any of the Engineered Safety Features are damaged.
- 5.3.4 If the station has been shutdown, determine, in consultation with the Shift Supervisor and the Operations Engineer, whether it should be returned to power.

Davis-Besse Nuclear Power Station

Unit No. 1

Administrative Procedure AD 1827.08

Flooding

# NUCLEAR SAFETY RELATED

Record of Approval and Changes

Prepared by R. P. Wathen	
Submitted by Teny Omeno	ay 3/30/76 Date
Recommended by All Alla	3/30/76
QA Approved Manager of Quality Assi	Date //.2.77 Date
Approved by Allan Station Superintende	3/30/16
Revision SRB Q	A Sta. Supt.
I BREque TISTOO Cher	eved Date Approved Date 82-00 TOMunay 8/13/30
2 Amoreny \$/12/03 C.T.D	aft/fil 4/2/83 TO: nung 4/2, 183

## 1. PURPOSE

This procedure describes the action levels and procedures to be followed by station personnel if flooding is imminent or has occurred at or near the Davis-Besse Nuclear Power Station. Specific actions to be taken in the event of flooding at or near the station will depend on the conditions of the emergency. Since time will be available to make critical decisions, this procedure emphasizes the conditions that warrant action and NOT the actions themselves.

1

# 2. REFERENCES

2

- 2.1 DBNPS-FSAR Section 2, "Site Characteristics"
- 2.2 Davis-Besse Nuclear Power Station Emergency Plan
- 2.3 AD 1827.11, "Assembly, Accountability & Subsequent Evacuation"
  - 2.4 EI 1300 series, Emergency Plan Implementing Procedures

# 3. ACTION LEVELS

- 3.1 General
  - 3.1.1 The occurrence of natural flooding is a situation that can be anticipated; therefore, precautions can be taken prior to the worst case to prevent station damage.
  - 3.1.2 Below mean lake elevation 574' no appreciable flooding of the area surrounding the station will occur. This is the normal condition requiring no emergency preparation or action (See Enclosure 1) unless level drops below the 565' lake elevation (See EI 1300.01, Emergency Plan Activation).

# 3.2 Flood Watch

A "Flood Watch" shall be in effect at DBNPS during lake water elevations for 574' to 576' as indicated by local flooding of the marshes and low areas around the station and water on or covering portions of the "A" access roads. (See cross-hatched areas of Enclosure 3).

# 3.3 Flood Warning

Lake water elevations between 576' and 578' as indicated by the flooding and closure of all "A" access roads (See Enclosure 3) require that a "Flood Warning" condition be announced. Host of the area around the station will be under water and only Duff Washa and other "B" or "C" roads will be usable for access and evacuation.

2

If determination that a "Flood Warning" condition exists, preparation should be made for the possibility of a flood emergency. Since there is no real danger to the station under this condition, operations are NOT affected but preparations for personnel transportion and rescheduling are important.

- 3.4 Flood Emergency
  - 3.4.1 At lake water level of 578' and above, all roads to the station are under water and impassable. Because of the limited access (rail, boat or helicopter) to the plant in case of other types of emergencies, this level for action is considered to be a "Flood Emergency". The Station Superintendent shall evaluate station operational safety at this level since personnel and access are limited.
  - 3.4.2 Worst case flooding with lake water levels over Elev. 580' may damage or cause deterioration to station equipment, particularly electrically operated apparatus. Items at ground level (Elev. 585') are, for the most part, protected from excessive water by dikes, walls and doors (See Enclosure 2).
  - 3.4.3 Water levels above the 585' elevation will enter buildings and flood lower levels except for the containment, which is sealed. Water inflow to electrical or electronic rooms may cause damage and probably require shutdown of the reactor.

# 4. PROCEDURE

- 4.1 General
  - 4.1.1 The Shift Supervisor is responsible for monitoring station operations during a flood condition and to schedule shifts for emergency operation depending upon available personnel. He shall maintain communications with the Gate House (and EDO when on site) in order to assess the flood conditions which may adversely affect station operation.
  - 4.1.2 The EDO is responsible for supervising emergency activities during flood emergencies and main-

AD 1827.08.1

taining communications with the off-site support groups. He is responsible for monitoring offsite flood conditions by, for example, sending out patrols to monitor access roads or communicating directly with the County Sheriff's Office, and for communicating this information to the control room and Station Superintendent.

# 4.2 Flood Watch (Water Levels from Elevation 574' or 576')

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4.2.1 The Shift Supervisor shall notify the Station Superintendent that a "Flood Watch" condition has occurred as soon as he receives notification that there is high water on the access roads to the station. Station evacuation is NOT necessary at this point.

- 4.2.2 The Shift Supervisor shall assign someone to begin evaluating the conditions around the station during the "Flood Watch".
- 4.3 Flood Warning (Water levels between Elevtion 576' and 578')
  - 4.3.1 The Shift Supervisor will announce that a "Flood Warning" condition is in effect when lake water levels have reached 576' and Route 2 has been closed.
  - 4.3.2 This second or intermediate stage of flooding requires a transition to a state of readiness by station personnel, particularly if higher water is expected.
  - 4.3.3 Nonessential personnel should be sent off-site before the "B" evacuation routes become impassable (578') or if conditions indicate that higher water levels are expected.
  - 4.3.4 During the "Flood Warning" period, assemblies may be held in the Operations Support Center (assembly room) to inform station personnel of the existing conditions, the possible dangers if the water levels increase appreciably, and the proposed operations and shift scheduling if evacuation and/or isolation is imminent.
  - 4.3.5 Prior to the station becoming isolated, the Ottawa County Sheriff's Department and Ohio Disaster Services Agency shall be notified in order to

provide emergency transportation to or from the site by DKW vehicle or boat.

4.3.6 Since the station will be isolated at water levels over 578' except for rail, boat or DKW, a minimal workforce shall be scheduled for essential operating and emergency activities. The Station Superintendent should determine at this level if station isolation would adversely affect other types of emergency conditions and safe operation.

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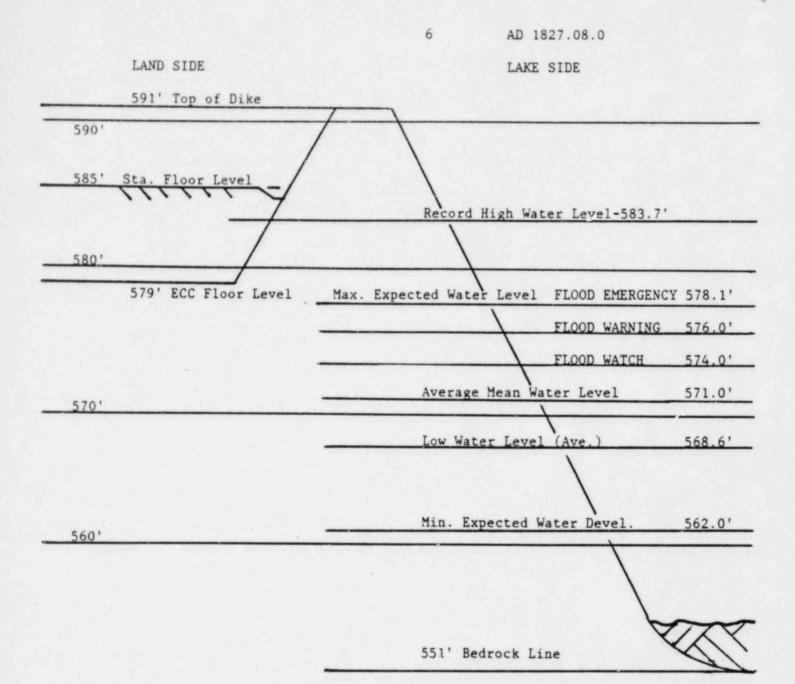
- 4.3.7 Rail transportation for operating personnel shall be requested by the Station Superintendent if isolation is anticipated.
- 4.4 Flood Emergency (Water Levels over 578')
  - NOTE: Check Emergency Plan Activation, EI 1300.01, to determine the proper emergency classification and take actions accordingly.
  - 4.4.1 At these water levels (over 578') all access roads will be impassable (See Enclosure 3) except by rail, DKW vehicles, or boats and a "Flood Emergency" should be announced by the Shift Supervisor.
  - 4.4.2 Station operation will be maintained by essential operating and staff personnel until a shutdown is determined to be necessary by the Station Superintendent and/or the Shift Supervisor.
  - 4.4.3 Full evacuation is NOT anticipated under any flood emergency conditions. Overnight accommodations shall be provided for emergency personnel during isolation. Rail, boat or DKW transportation shall be utilized to change shifts as required.

# 4.5 Transportation

- 4.5.1 Vehicular transportation into and from the site shall be utilized to the greatest extent possible. Motor vehicles can be used unitl "B" access routes are impassable (Water Elev. 578').
- 4.5.2 Rail transportation into and from the station is the secondary transportation mode. Personnel may board rail mobiles or cars at the inter-

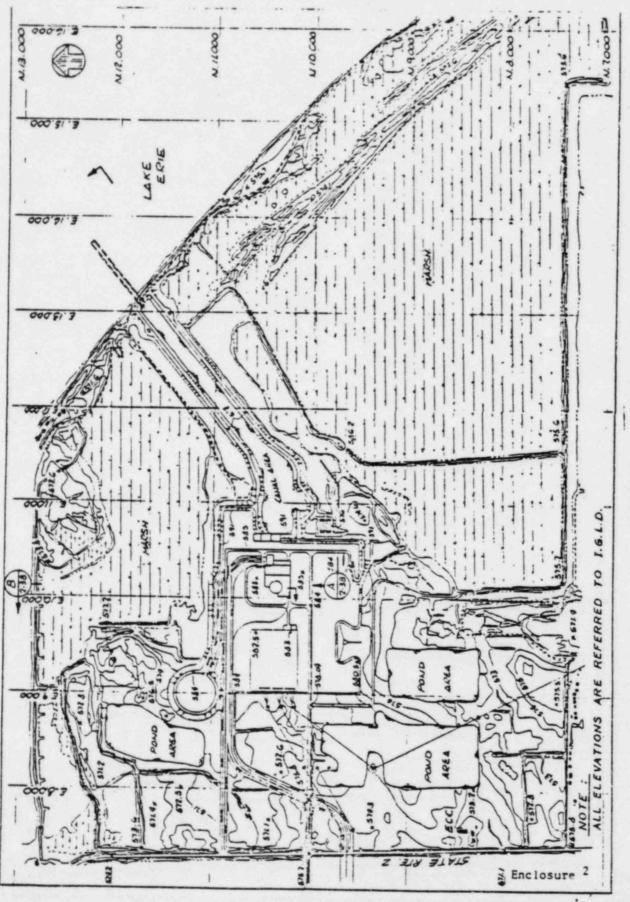
section of the rail spur with State Route 590 about three miles south of Route 2, three miles north of State Route 163 at the intersection of Toussaint North Road (62), or in Oak Harbor. (See Enclosure 3)

4.5.3 DKW vehicles or boats are the third type of transportation that can be used for site access if all roads are closed. It is anticipated that most of these DKW vehicles and boats will be used for personnel evacuation in the surrounding areas and won't be available for regular service to the station site.



# DAVIS-BESSE NUCLEAR POWER STATION

ELEVATION PROFILE

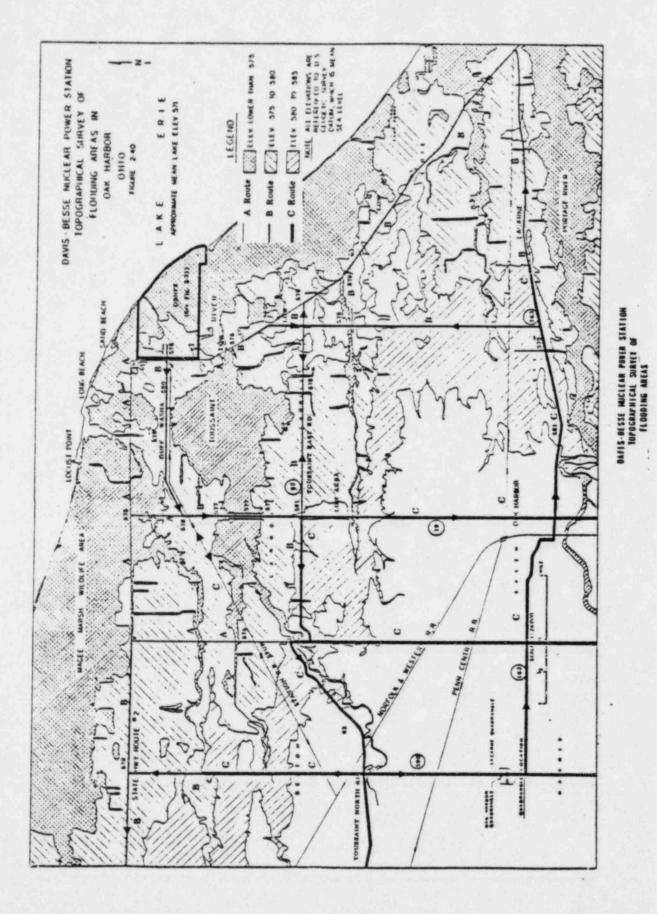


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DAVIS-BESSE NUCLEAR PORER SIGTION FINISHED SITE TOPOGRAPHY

AD 1827.08.0



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AD 1827.08.0

END

AD 1827.09

Davis-Besse Nuclear Power Station

. Unit No. 1

Administrative Procedure AD 1827.09 Radioactive Transportation Accident

# NUCLEAR SAFETY RELATED

Prepared by	C. B. Doyel, W. H. Green	2/4/76	
		Date	
Submitted by	D. W. Briden	2/10/76	
	Section Head	Date	
Recommended by_		2/24/76	
	SRB Chairman	Date	
QA Approved	NA/DWB		
	Manager of Quality Assurance	Date	
Approved by	Jack Evans	2/24/76	
	Station Superintendent	Date	

Revision No.	SRB Recommendation	Date	QA Approved	Date	Sta. Supt. Approved	Date
1	Recommendation	81-79/78	EJUARely	2/12/80	Lound	7/12/80
2	many	4/12/83	C.T. Daft	Fch 4/20/8	3 70-72-	J 4/2, /33

Record of Approval and Changes

# PURPOSE

1.

The purpose of this procedure is to establish the actions which may be taken by various members of the Davis-Besse Nuclear Power Station (DBNPS) to give assistance in the case of an accident involving a transportation vehicle carrying radioactive material either (1) within the station boundary or (2) in the general vicinity of the station when requested by the carrier or other outside source (i.e., police or sheriff).

1

Toledo Edison assumes no legal responsibility for planning or coordinating the overall response to any transportation accident outside the station boundary. Assistance may be provided by the Davis-Besse staff emergency organization when requested, as long as the capability to deal with a possible on-site emergency is not compromised. This procedure delineates the actions that could be taken in the event that a transportation accident does occur. If the incident involves nuclear fuel, or a Type B shipment, the Director of QA shall be notified.

# 2. PROTECTIVE ACTION GUIDELINES

The provisions of this procedure should be implemented if either of the following events occur:

- 2.1 Verification from TECc operating personnel that an accident involving the transporting vehicle has occurred on-site (within the owner controlled area of the DBNPS).
- 2.2 Verification from an outside source that an accident involving a vehicle transporting radioactive material has occurred offsite (within approximately 25 miles of the DBNPS) and assistance is requested by the carrier or local emergency agency.

# 3. ON-SITE ACCIDENTS

2

On-site accidents are to be dealt with using the provisions of EP 1202.40, "Radioactive Spills", and AB 1203.13, "High Airborne Activity". These two procedures contain all the provisions necessary to successfully handle the accident and any accompanying radiological emergency.

# OFF-SITE ACCIDENTS

All actions listed in this section are predicated upon notification of the station staff of an accident off-site by an outside organization.

4.1 Actions of Persons at the Station Receiving the Call for Assistance

4.1.1

1

1

1

Obtain the following information:

1. Location and time of accident

2

- 2. Type of accident
- 3. Type of radioactive material involved
- 4. Extent of the radiological spill, if any (an estimate)
- Emergency actions taken by outside organizations
- Name of individual or organization making call
- 7. A return phone contact if available
- ID of carrier, shipper, and/or destination if any are readily known.
- 4.1.2 During normal working hours, notify the Station Superintendent and the Chemist and Health Physicist and inform them of 4.1.1.
- 4.1.3 During off normal hours, weekends, and holidays, notify the Shift Supervisor of 4.1.1.
- 4.2 Action of Shift Supervisor (During off normal working hours, weekends, and holidays)

Ensure that the information of 4.1.1 is forwarded to the Station Superintendent, the Chemist & Health Physicist and the EDO, and enter in the Unit Log.

4.3 Action of the Station Superintendent

Determine from the information obtained in 4.1.1 whether or not Toledo Edison will provide assistance, and inform the Chemist and Health Physicist and the EDO of his decision. He shall also notify Toledo Edison Management to advise them of the situation. The Toledo Edison Company Public Relations Department shall be responsible for any news released from Toledo Edison Company concerning the incident.

4.4 Action of Chemist and Health Physicist

If directed, the Chemist and Health Physicist should dispatch a Radiation Monitoring Team(s) with radiological monitoring and sampling equipment (off-site Kit from the ECC). The C&HP should accompany the RMT(s) sent to the scene and provide assistance to the State authorities and others as required. He shall be responsible for recording relevant events and informing the EDO of status. He should also provide the Station Superintendent with reports of events.

3

- 4.5 Action of EDO
  - 4.5.1 If directed, proceed to (ECC) Emergency Control Center.
  - 4.5.2 Establish communication with Chemist & Health Physicist.
- 4.6 Action of the Radiation Monitoring Team(s)

The Radiation Monitoring Team(s) should accomplish the following actions upon arriving at site of accident:

- 4.6.1 Commence making surveys as required.
- 4.6.2 Set up a controlled area if not already established.
- 4.6.3 Take smear sample of the vehicle and cask as required.
- 4.6.4 Prepare to decontaminate the area as conditions permit.
- 4.6.5 Obtain personnel dosimetry results from all persons involved in the accident and clean up.
- 4.7 Davis-Besse Facilities Availability

Toledo Edison Company may, as determined by the Station Superintendent, also make the facilities at Davis-Besse Nuclear Power Station available for use by the carrier. Decontamination of personnel and treatment of minor injuries may require the use of the facilities. Decontamination shall be accomplished in accordance with HP 1604.01, "Personnel Decontamination Procedure". Where injuries are involved, the situation shall be governed by EP 1202.43, "Non-Radiological Injuries Procedure" or EP 1202.39, "Medical Treatment and Handling of Contaminated Individuals Procedure".

#### 5. RECORDS

In addition to the Unit Log entries, the Chemist and Health Physicist may keep an accurate record of all actions taken from the onset of the incident until the area is decontaminated or the Toledo Edison Company assistance is no longer required, whichever is first. This record should be kept by the Chemist and Health Physicist.

4

After the completion of the incident, the Chemist and Health Physicist should prepare an evaluation of the incident and along with the copies of all relevant records, submit the report to the Station Review Board (SRB) for review. After the SRB review and recommendations are documented, the records shall be filed in the central file under the heading of Radioactive Transportation Accidents.

#### INCIDENT REVIEW

1

Review of the incident is conducted by the Chemist and Health Physicist as he prepares his evaluation and by the SRB as they review the evaluation and the associated records. The review should consider the following items:

- 6.1 The readiness and ability of the station staff, especially the RMT, to cope with the incident.
- 6.2 The suitability of this procedure to provide sufficient guidelines to handle the emergency.

In light of these two items, the Chemist and Health Physicist and the SRB may make recommendations to changes in training and procedures to deal with this type of emergency.

	T-1118 DISTRIBUTION 	sponsible Section Head Action Aaster File
DAVIS-BESSE NUCLEAR POWER STATION - UNIT 1 TEMPORARY MODIFICATION REQUEST	COPIES TO BE MODIFIED FOR IMMI Control Room (2) Shift Supervisor (2)	EDIAYE IMPLEMENTATION ECC (2) TSC (2)

SECTION 1

# AD 1827.10 OFFSITE DOSE ESTIMATES

REASON FOR CHANGE

TO CORRECT REFERENCE NOTED IN THIS PROCEDURE.

CHANGE

SECTION 4, PART 4.1.1, NOTE (FIRST NOTE), SHOULD READ:

NOTE: If data cannot be obtained from the site meteorological tower, backup data to perform Offsite Dose Calculations may be obtained by calling the agencies listed in Attachment 2, Section X, Part F, of Admin. Memo No. 37.

Ron Durdel Ron Durdel	DATE 4/8/83
APPROVED BY RECE HILL	DATE 4/8/83
APPROVED BY Q. G. Fairs	DATE 4/8/83
SUBMITTED BY (Section Head) D. W. Brichen	DATE 4)/11/83
RECOMMENDED BY (SRB Chairman)	DATE 4/19/83
2A APPROVED BY (Manager of Quality Assurance).	DATE 4/20/83
APPROVED BY (Station Superintendent)	DATE

	T-7/1/ File Copy, Master File
DAVIS-BESSE NUCLEAR POWER STATION - UNIT 1	COPIES TO BE MODIFIED FOR IMMEDIATE IMPLEMENTATION
TEMPORARY MODIFICATION REQUEST	Control Room

SECTION 1

AD 1827.10 Offsite Dose Calculations

REASON FOR CHANGE

Incorporate use of Prime Computer for performing dose calculations.

CHANGE

3

4,0

Add the following note to section 4 prior to section 4.1.

Note: Dose calculations may be performed using the Prime Computer. Instructions for accessing the Prime can be found at the ECC terminal and the Control Room terminal,

IS PROCEDURE REVISION REQUIRED	no, this modification is valid until
William L. Yarosz	DATE 3/22/83
APPROVED BY Jan's Downing	DATE 4583
APPROVED BY MO	DATE 4-3-83
SUBMITTED BY Rection Head) Hiseh / wally_	DATE 4/5/83
RECOMMENDED BY (SRB Chairman)	DATE 4/5/83
DA APPROVED BY (Manager of Queitty Assurance)	DATE
APPROVED BY (Station Superintendent)	DATE

DISTRIBUTION A Original, Responsible Section Head Action T-6491 File Copy, Master File COPIES TO BE MODIFIED FOR IMMEDIATE IMPLEMENTATION **DAVIS-BESSE NUCLEAR POWER STATION - UNIT 1** tin 35-L 500-2 TEMPORARY MODIFICATION REQUEST CTR4-2 Chino I sheeth Hour - 2 ED 6926 SECTION 1 PROCEDURE TITLE AND NUMBER Catimula AD 1827, 10 REASON FOR CHANGE Af set in Meterological deta is no lorge carmina of of Dec PDP 11/03 that is no ward of of Dec PDP 1/2. She 11/31 accurs from the 11/03. CHANGE Are Attacked pages und the for 11/3x IS PROCEDURE REVISION REQUIRED Yes No If no, this modification is valid until \_ PREPARED DATE 182 APPROVED BY DATE APPROVED BY DATE SUBMITTED BY (Section Heed) DATE A WB RECOMMENDED BY (SRB Chairman) DATE

DATE

DATE

	QA APPROVED BY Manager of Quality Assu
CLP	APPROVED BY (Station Superintendent)

## Instructions For Accessing DEC PDP 11/03 For Meterological Data

- 1. Turn phone accessed data terminal on.
- Ensure unit is in ready mode (Press the LOCAL/TALK button on Model 2. 43 terminal).
- 3. Check three options:

4.

111

27.2

c.

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8. .

h

c

- a) PARITY - off
- 6) DUPLEX - full
- c) BAUD - 300 CE 30 CPS

Computer will type:

Computer will print

out data requested and

Type in:

then type:

Dial phone number 898-6240 (Oak Harbor). When the frequency tone is heard, press the DATA button on Model 43 terminal or insert receiver into the acoustic coupler on other models.

Correspondence between Computer and Terminal Operator: 5.

••	Computer will type:	WHO ARE YOU?
	Type in:	t (an up arrow)
	Computer will type	II = IIR. M = MTN

d. Type in: IIR, M = MIN, C = CAL

H, M, or C (Type only one for either hourly, minute or calibration check)

3 1.1 Type "H" to request data, by hourly intervals, for the date specified. "

Type "M" to request data, by 15 minute intervals, for the date specified.

1.2.2

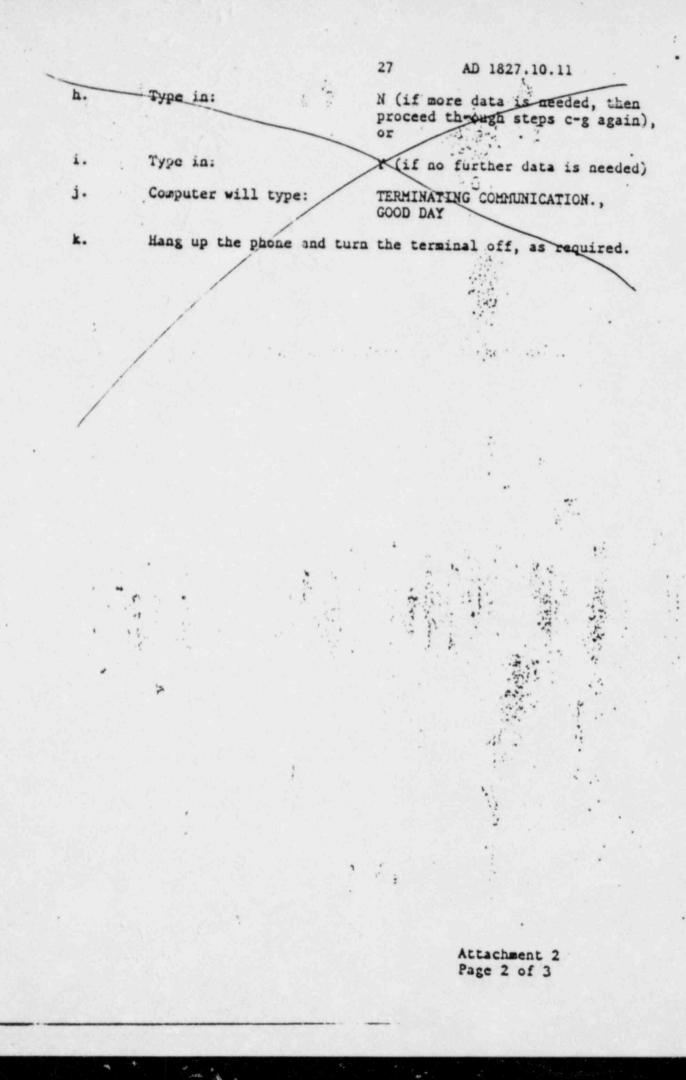
Type "C" to request calibration , check (not normally used)

ACCESSED COMPUTER. TYPE JULIAN DATE REQ.

Three digit Julian date (e.g. 001, 072, 365)

TRANSMISSION COMPLETE. ALL DONET .... Y OF N

> Attachment 2 Page 1 of 3



Case of

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Sample Output of Meteorological Data (While Accessing DEC PDP 11/03)

28

				*	(WD	ille /	Access	ing	DEC P	DP 11	/03)		1	÷.,	38-1 C
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	/							_ F1	ev 82	1' W1	nd s	irect.			
		< · · ·						_ F1	ev 61	21 w1	nd d	irect.	200		
		1						_ E1	W 61	2' wi	nd d	irect	1	10.00	1.1
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			/					4			/				rential
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HR: AN	US UD	SD	us bi	SD	US UB	SB	BT.	DT	ANB 1	0000	IUDN	CIP	DDDFF		
1:	27.7	2.	24.4	13.	13.0	7.	0.1	1.1	30.4		15.4		1	0	
	19:			2.	17	6.		0.0	/	11.7		0.00	1	0	
2:	26.8		23.4	2.	12.6	7.	0.3		32.0		17.0		1	0	
1.1	19		20	14.	19			0.0	/	13.4		0.00	1	0	
3:	25.3		21.7	2.	104	7.	2.0	/	31.7		13.7		1.	0	
	210			3.	19			1.1		15.5		0.00	1	0	
4:	27.6		24.4		13.9	. 6.	9.5	1	35.8		19.7		1	0	
5:	31.0			27.	21	N	1.1	10.4		17.5		0.00	1	0	
	22		27.9	28.	17.5		-0.1/		37.1	12.2	29.7		1	0	
6:	32.2		29.2		211	· s.	-9/3	-0.0	37.6	19.5		0.00	•	0	
	223			10.	21		N 2	-0.1	37.0	22.5	23.4	0.00	'	2	
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	230			.8.	22			79.5		25.8		0.00	1 <b>1</b> 1		
8:	31.6	3.	27.0		20.7	4.	-0.4	1	36.4		28.2		1	0	
19 E -	234			15.	23	5./		1.0-		28.0		0.00	· 1	0	1.1
9:	31.3		29.0		21.2	14.	-0.5		35.3		28.8		1	. 0	1.10
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LEG	END			1	1.5				1.1.1.3		1			1.5	

hour, minute (Eastern Standard IIR : MN NOTE: Data for RDP 11/03 is Time) read from the Het Tower HOOH 100M elev (917') and stored for three 75M elev (821') 10M elev (612') 15M days only. If McL Tower 101 is down, only previous WS wind speed (MPII) information can be wind direction (degrees) WD accessed. SD standard deviation DT differential temperature °F ambient dry bulb temperature of amb WU dewpoint temperature "F precip precipitation

END

Attachment 2 Page 3 of 3

#### Instructions For Accessing DEC PDP 11/34 For Meteorological Data

- 1. Turn phone accessed data terminal on.
- 2. Ensure unit is in ready mode (LOCAL button on)
- 3. Check the options:
  - a. PARITY off
  - b. DUPLEX full
  - c. BAUD 300 or 30 CPS
- 4. Dial phone number: 2379. When the frequency tone is heard, press DATA button. Hang up phone receiver.
- 5. Computer/Operator correspondence:
  - a. Computer will type: >
  - Operator will type: HELLO 100,100 Return carriage
  - c. Computer will type: PASSWORD:
  - d. Operator will type: (Refer to memo dated July 1, 1982 from Jennifer Scott-Wasilk For the appropriate password) Return carriage NOTE: Password will not be printel
  - e. Computer will type:

RSX-11M BL26 MULTI-USER SYSTEM

GOOD AFTERNCON 08-JUL-82 13:23 LOGGED ON TERMINAL TT10:

> Toledo Edison Company Davis-Besse Site Environmental Monitoring Company System

UNAUTHORIZED ACCESS INTO THIS SYSTEM IS PACH LITED BY FEDERAL LAW

NOTE: The system time on this computer remains at Eastern Standard Time the year around.

>@LOGIN.CMD >SET /SLAV-TI: >; >; DAVIS-BESSE WEATHER DATA >; >RUN SURVEY

#### SELECT OPTION

 DISPLAY HOURLY AVERAGE WEATHER DATA
 DISPLAY 15 MINUTE AVERAGE DATA
 LIST WEATHER TOWER GENERAL INFORMATION
 LIST DEFINITIONS OF WEATHER DATA ABREVIATIONS OR CARRIAGE RETURN TO LOG OFF ENTER OPTION (1, 2, 3, or 4):

- f. Operator will type: (Enter option of your choice) Return carriage NOTE: Computer is on EST
- g. For Option 1, Computer will type: Please enter the starting month, day, and hour you wish to look at or RETURN to return to option list (MM,DD,HH, or RETURN)

Operator will type: (Enter month, day, and hour of your choice. Return carriage Example: 07,08,10)

Computer will type: Please enter the ending month, day, and hour you wish to look at (MM,DD,HH):

Operator will type: (Enter month, day, and hour of your choice. Example: 07,08,15)

h. For Option 2, Computer will type: \_\_\_\_\_ is t

is the current time (EST). Any hours you ask for which are greater than this hour will assume to be hours which occurred yesterday. A total of 24 hours worth of 15-minute average data is available.

Enter the starting and ending hours (0-23), or 24 to get all 24 hours, or RETURN to return to option list [SHR, EHR, or 24 or RETURN]:

- i. Computer will print out requested data and return to option list
- j. If more data is required, repeat steps f j.
- k. If you wish to sign off, push RETURN and computer will print:

>:
>SET /NOSLAVE=TI:
>BYE
TASK "...AT." TERMINATED
ABORTED VIA DIRECTIVE OR MCR
AND WITH PENDING IO REQUESTS

HAVE A GOOD AFTERNOON > 08-JUL-82 13:25 TT10: LOGGED OF?

1. Push TERM READY to return printer to a stand-by condition.

# DAVIS-BESSE SITE WEATHER DATA

second in the second of the

# HOURLY AVERAGES

# 7/ 9/82

	100 M	ETERS	75 1	METERS	10 1	METERS	100	75	AMB	1004		
HOUR	USPD	WD/SD	USPD	UD/SD	USPD	UD/SD	DT	DT	TEMP	PNT	RAIN	
1	8.8	339.	8.0		4.1	324.	1.2	1.0	72.7	69.4	0.00	
2	9.4	3.0	9.2	4.0	5.4	5.0	0.1	0.4	72.2	68.0	0.00	
3	9.2	5.0	9.0	6.0 348.	5.6	10.0	-0.8	-0.4	71.7	67.5	0.00	
	10.0	3.0 348.	9.9	5.0 347.	6.3		-0.5	-0.1	70.9	22.4	0.00	
5	11.1	3.0 349.	10.9	4.0	6.3	17.0	-0.4	-0.0	69.7	63.1	0.00	
6	8.9	6.0	8.8	7.0	6.6	10.0	-1.2	-0.9	70.4	65.3	0.00	
7	8.8	4.0	8.3	3.0	7.6	8.0	-1.5	-1.2	76.8	65.6	0.00	
8	99.9	7.0	99.9	7.0	99.9	12.0	99.9	99.9	999.09	999.0	0.00	
		****	-	****		****						







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# METEOROLOGICAL PARAMETER ABREVIATION DEFINITIONS

USPD -- Wind speed in miles per hour. USPD's are given at the 100 meter 75 meter, and the 10 meter levels.

WD -- Wind direction in degrees, north = 0. WD's are given at the 10 0 meter, 75 meter, and the 10 meter levels.

SD -- Standard deviation (sigma theta) of the horizontal wind direction SD's are given at the 100 meter, 75 meter, and the 10 meter levels

100 DT -- Temperature differential in degrees fahrenheit between the 10 0 meter and the 10 meter levels.

75 DT -- Temperature differential in degrees fahrenheit between the 7 5 meter and the 10 meter levels.

AMB TEMP -- Temperature in degrees fahrenheit at the 10 meter level. 10 DW PNT -- Dew point temperature in degrees fahrenheit at the 10 mete r level.

100 DW PNT -- Dew point temperature in degrees fahrenheit at the 10 0 neter level. 100 DW PNT's are only available for 15 minut e averaged data.

RAIN -- Precipitation in inches (down to 1/100 of an inch) at the 1 meter level. Precipitation is never averaged, instead, it i s totalled.

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Davis-Besse Nuclear Power Station

Unit No. 1

Administrative Procedure AD 1827.10 Emergency Off-Site Dose Estimates

# NUCLEAR SAFETY RELATED

#### Record of Approval and Changes

Prepared by C.	Doyel, W. Green	2/6/76
	ter. Her her den state in the second	Date
Submitted by	D. W. Briden	3/3/76
	Section Head	Date
Recommended by	Jack Evans	5/18/76
31	SRB Chairman	Date
QA Approved	J.D. Lenardson/JCB	6/3/76
	Manager of Quality Assurance	Date
Approved by	Jack Evans	6/4/76
	Station Superintendent	Date

Revision SRB QA Sta. Supt. No. Recommendation Date Approved Date Approved Date 115/20 lex7 1/7/20 2 4/24/79 32/10/20 18040 344 6789 Jenardon, 1/22 2/14/80 81.7/80 7/15/30 7-30-00 TOM 1013:150 12.29-03 1/30/80 1115181 5.01 1/25/00 130 5/2/21 34 BRA 181 2/10/81 laf TOMur E2 Daft/ef37/23/81 7/17:81 E 2 Det legs ichater 10/30 181 10)9/ T nau X 81 === Saft/ep/2/81 10 11/2/31 e- 2 Safr/egg 2/23/82 2/101 182 11 C2001/epo/3/82 7 6/4/8 4/22/8 12

#### PURPOSE AND SCOPE

- 1.1 The purpose of this procedure is to estimate off-site whole body exposure rates from Xenon-133, and thyroid exposure rates to adults and children from I-131 for accidental, uncontrolled releases.
- 1.2 Radioactive particulate material is not addressed because protective actions are based on assuming the iodine exposure pathway is critical, and should provide sufficient protection from radioactive particulate material. (Based on information from Section 5.1.2 of EPA-520/1-75-001, Revised 6/79.)

#### 2. REFERENCES

11

11

- 2.1 NRC Regulatory Guide 1.4, Assumptions Used for Evaluating the Potential Consequences of a Loss of Coolant Accident for Pressurized Water Reactors
- 2.2 Manual of Protective Action Guides and Protective Actions for Nuclear Incident EPA-520/1-75-001, September 1975 (Revised June 1979)
- 2.3 Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, NUREG-0654/FEMA-REP-1, Rev. 1
- 2.4 NRC Regulatory Guide 1.23, Onsite Meteorological Programs
- 2.5 The Davis-Besse Nuclear Power Station Emergency Plan and EI 1300 Series, Implementing Procedures
- 2.6 AD 1827.12, Protective Action Guidelines
- 2.7 AD 1839.00, Station Operations
- 2.8 TECo NQAM
- 2.9 FSAR, Section 17.2
- 2.10 Admin. Memo 37, ECS Pager and Telephone Numbers
- 2.11 NRC Regulatory Guide 1.145, Atmospheric Dispersion Models for Potential Accident Consequence Assessments at Nuclear Power Plants

#### 3. RESPONSIBILITIES

In the event of the accidental release of gaseous radioactivity,

the Shift Supervisor shall make an initial evaluation of the 'situation and classify the emergency in accordance with EP 1202.37. High Airborne Activity.

2

- 3.1 For local releases, any calculation of release rates and dose rates should be done under the direction of the Shift Supervisor by:
  - 1. An Administrative Assistant, or
  - 2. Other qualified, available personnel.\*

\*The STA may perform release and dose rate calculations if the STA feels that performing such calculations does not interfere with his primary responsibilities of maintaining a broad perspective of the event and consulting with the Shift Supervisor.

Requirements for notification of other persons to deal with these types of releases are found in the EI 1300 series, Emergency Plan Implementing Procedures, and EP 1202.37, High Airborne Activity, and AD 1839.00, Station Operations.

- 3.2 For conditions that require Emergency Plan implementation, release rates and dose rates should be performed under the direction of the Emergency Duty Officer (EDO). The Shift Supervisor, acting as interim EDO, should designate:
  - 1. An Administrative Assistant, or 2. Other qualified, available personnel.\*

to perform these calculations. If the Emergency Control Center has been activated, the designated EDO should direct response personnel within the ECC to perform the dose calculations relieving the Shift Supervisor of this responsibility.

\*The STA may perform release and dose rate calculations if the STA feels that performing such calculations does not interfere with his primary responsibilities of maintaining a broad perspective of the event and consulting with the Shift Supervisor.

#### 4. PROCEDURE

12

4.1

- Release from Station Vent.
  - 4.1.1 Complete Data Sheets No. 1 and No. 2. Instructions for completing the required information are provided on the Data Sheets.

- NOTE: If data cannot be obtained from the site meteorological tower, backup data to perform Offsite Dose Calculations may be obtained by calling the agencies listed in Attachment 2, Section IX.6 of Admin. Memo No. 37.
- NOTE: A programmable calculator and its printer (located in the Shift Supervisor's Office and Emergency Control Center) may be used in place of Data Sheets No. 1 and 2. See Attachment 1 for instructions.
- 4.1.2 Use AD 1827.12 Protective Action Guidelines to determine the protective actions to be initiated. The EDO should make plume exposure recommendations per this procedure.

3

- 4.1.3 If an evacuation is initiated, it should include an area 22 1/2° to 45° each side of the plume center line (Based on Appendix I from NUREG-0654/FEMA-REP-1).
- 4.1.4 If evaluations or RMT sample results indicate ingestion exposure that exceeds the plume exposure evacuation area, recommendations for further evacuation should be made by the Emergency Operations Manager in accordance with ingestion exposure Protective Action Guidelines given in AD 1827.12.
- 4.1.5 Should the NRC request direct contact with the individual performing offsite dose calculations, it is the responsibility of the Emergency Duty Officer to ensure that the requesting NRC official is contacted directly by an appropriate cognizant individual. Any available phone could be used for this purpose.
- 4.2 Releases from MSSV's, Auxiliary Feed Pump Turbine Exhaust, and Atmospheric Vent Valves.
  - 4.2.1 Calculate the release of Xe-133 from the SJAE as follows:

Release Rate (Ci/sec) = (CONV FACT)(SJAE ACT)(SJAE FLOW)

Where: CONV FACT = 6.6 E-11 (RE 1003A) or 1.2 E-11 (RE 1003B) SJAE ACT = RE 1003A or B reading in cpm SJAE FLOW = FI 1002 in cfm

4.2.2 In the event of a reactor trip, quantify the gaseous release of Xe-133 and I-131 via any and all other release points using the following calculation:

Release Rate (Ci/sec) = 6.3 E-5 (LR)(RCS Conc'n)

4

2.

Where: RCS Conc'n = latest I-131 or Xe-133 concentration in the RCS in µCi/cc.

> LR = latest leak rate in gpm as determined from EP 1202.57, Appendix C, or Appendix D, Step 7.

NOTES: 1. I-131 and Xe-133 are expected to be the highest dose contributors, however, any radionuclide may be used in the above calculation.

- The above calculation conservatively assumes all the activity leaking to the secondary side is escaping. That assumption is accurate if the MSIV's go closed for the first minute following the trip. When the MSIV's open the calculation becomes more conservative.
- Emphasis should be placed on the latest leak rate determination as it could be reduced upon power reduction.
- 4. If steam continues to be released with the MSIV's open, and the affected S/G still not isolated, a sample of the S/G steam on the affected S/G should be collected and analyzed. The following comparative evaluation can be made for radioactive release rate:

Release Rate (Ci/sec) = 3.5 E-6 (STM FLOW)(SG STM CONC)

- 4.2.3 If the MSIV's remained closed following a reactor trip, and there is a S/G tube leak, Xe-133 in Ci/sec can be determined use RE 600 or RE 609 as follows:
  - The analyzer/gross switch <u>must</u> be positioned in the Gross Mode.

5

NOTE :

These switches are normally in the Analyzer Mode to selectively monitor N-16.

When the switches are changed to the Gross Mode, high alarms will result because the setpoints were selected based on N-16.

- Net cpm readings are calculated by subtracting a 1000 cpm from the actual readings. (1000 cpm are the normal background readings in the Gross Mode.)
- While in the Gross Mode, convert the cpm readings on RE 600 and RE 604 rato µCi/cc Xe-133 by multiplying cpm times 1 E-5 (µCi/cc)/cpm.
- 4. To obtain Ci/sec of Xe-133 being released, multiply  $\mu$ Ci/cc times 3.5.
  - NOTE: Steps 1. through 4. above are based on 1 E+6 lb/hr saturated steam flow at 995 psi with a specific volume of 0.45 ft<sup>3</sup>/lb, and a Bechtel to TED letter (BT-10372) dated June 4, 1980.
- 4.2.4 To calculate the resulting whole body dose rate from Xe-133, start with Step (7.) of Data Sheet No. 1 and insert the Ci/sec Xe-133 as determined from Steps 4.2.1, 4.2.2 or 4.2.3.
- 4.2.5 To calculate the resulting thyroid dose rate from I-131, start with Step (5.) of Data Sheet No. 2 and insert the Ci/sec I-131 as determined from Step 4.2.2.

# DATA SHEET No. 1

# Estimated Downwind Whole Body Exposure from Xenon-133

	(1.)	Record the date and time	Date	Time
	(2.)		RE 2024C reading	CPM
		the appropriate meters for RE 2024C and RE 2025C	RE 2025C reading	CPM
1		tion Vent is to b	are off scale, the X e obtained using the ribed in AD 1850.04.	Emergency Station
11	(3.)	From Figure 1, record the corresponding		µCi/cc
'		concentration in µCi/cc	RE 2025C conc'n	µCi/cc
	(4.)	Record the flow rate through the Unit Vent from Computer Point F885 and convert to CFM		CFM = CFM
	(5.)		CFM (4.72x10	<sup>2</sup> ) = cc/sec
	(6.)	Calculate the estimated release rate for Xe-133 by multiplying the highest value	nignest	cc/sec = m (5.) <u>µCi</u> sec
	(7.)	from (3.) times (5.) Convert release rate (Q) in (6.) to Ci/sec	$\frac{\mu Ci}{From (6.)} \xrightarrow{\mu Ci} x (1 x)$	10 <sup>-6</sup> <u>Ci</u> ) = Ci/sec
1	(8.)	Record the wind direction (use 612' elev. if avail- able) from the instru-	± 180	
11		mentation as listed in Table 1. Then add or subtract 180° to obtain the downwind direction (this value should not exceed 360°)	Wind direction	Downwind direction
11	(9.)	Record the wind speed (use 612' elev. if avail- able) from the instru- mentation as listed in Table 1. Then convert the wind speed from mph to m/sec	mpn 3 0.44/	<u>/sec</u> = m/sec

11

DATA SHEET No. 1 (Continued)

(10.)	Determine Stability Class	
	by any of the following	Stability Class
	(a) Read ∆T from computer	
	point T698 then from	
	Table 2-A, record	
	the Stability Class,	
	or	
	(b) Determine ΔT by 821'	
	°F versus 612' °F	
	then from Table 2-A,	
	record the Stability	
	Class, or if not avail-	
	able, (c) Read the Standard	*San Attachment 2 Instruct
	Deviation of Wind	*See Attachment 2, Instruc- tions for Accessing DEC PDF
	Direction at the 35	11/03 on G.E. Time Sharing.
	meter level (612'	11/05 ou o.e. time sharing.
	elev.) from the PDP	
	11/03 printout*	
	(Column SD under 35M)	
	then from Table 2-B,	
	record the Stability	
	Class, or, if not	
	available,	
	(d) Read the Standard	
	Deviation of Wind	
	Direction at the 75	
	meter level (821'	
	elev.) from the PDP 11/03 printout*	
	(Column SD under 75M)	
	then from Table 2-B,	
	record the Stability	
	Class.	
	Uning Table 2 antes Villa	(-*2) 5
		$(m^2)$ for distances of 1, 2, 5, 10, Lity class in (10.), and enter in
		me X $\mu/Q$ can be used if known)
(12.)		speed (m/sec) from (9.), and enter in
	Column B.	
(13.)		e-133 (Ci/sec) from (7.) and enter in
		acentrations at 1, 2, 5, 10, and 20
14.5	miles downwind.	104 to coloulate the estimated while
(14.)		10 <sup>4</sup> to calculate the estimated whole and enter in Column D. (Based on

	Column A	Column B	Column C	Column D
Downwind Distance (miles)	$\frac{\underline{X}  \overline{\mu}}{\underline{Q}}_{(\underline{m}^2)}$	$\frac{X \ \overline{\mu}}{Q \ (wind speed)}$ (sec/m <sup>3</sup> )	Xe-133 concentrations (µCi/cc)	Whole body exposure from Xe-133 (mR/hr)
1				
2				
5				
10				
20				

# DATA SHEET No. 1 (Continued)

#### DATA SHEET No. 2

9

# Estimated Downwind Thyroid Dose to Adults and Children from I-131

(1.)	Record the date and time	Date Time	
(2.)	Record the I-131 activity	Tribula	-
	from RE 2024B and RE 2025B	(i) lst count: time $(a)$ , $(b)$	pm
	CAUTION: Noble gases can		
	make the I-131	(ii) 2nd count: time $(c)$ , $(d)$ c	pm
	appear falsely		
	high. Have C&HP		
	personnel verify the I-131 de-		
	tected. If the		
	incident con-	(iii) $\frac{cpm}{min} = \frac{(d-b)}{(c-a)} = \_\_\_=$	
	tinues, insert	(111) min (c-a)	
	silver zeolite		
	filters.		
	(i) Record the time and		
	cpm for RE 2024B		
	and RE 2025B	RE 2025B:	
	(ii) Approximately 10	(i) 1st count: time , c	pm
	minutes later, re-		
	cord the time and	(ii) 2nd count: time $\frac{(a)}{(c)}$ , $\frac{(b)}{(d)}$ c	pm
	cpm for RE 2024B	(c) (d)	
	and RE 2025B	cpm (d-b)	
	(iii) Subtract cpm in (i)	(iii) $\frac{\text{cpm}}{\text{min}} = \frac{(d-b)}{(c-a)} = \_\_\_= \_\_$	
	from (ii) and di-	(/	
	vide by the dif- ference in minutes		
	to obtain cpm/min		
	for RE 2024B and		
	RE 2025B		
(3.)	From Figure 2, record	RE 2024B conc'n µCi/c	c
	the corresponding		
		RE 2025B conc'nµCi/c	с
11	µCi/cc		
(4.)	Calculate the estimated	uCi	
	release rate for	$\frac{\mu Ci}{cc} \times \frac{4.44 \times 10^7}{cc/sec} =$	
	I-131 by multiplying the highest value	rrom (S.),	
	from $(3.)$ times $4.44 \times 10^7$	Value <u>Jui</u> Value	
(5.)	Convert release rate		
	(Q) in (4.) to Ci/sec	$\frac{\mu Ci}{\sec (1 \times 10^{-6} \frac{Ci}{\mu Ci})} =$	
		From (4.) sec µCi	
		Ci/sec	
(6.)	Same as (8.) on Data		
	Sheet No. 1	Downwind direction	
(7.)	Same as (9.) on Data	m/sec	
	Sheet No. 1	wind speed	
	The second s	the second s	-

11

DATA SHEET No. 2 (Continued)

(8.)	Same as (10.) on Data Sheet No. 1 Stability Class
(9.)	Using Table 3 enter $X\overline{\mu}/Q$ (m <sup>-2</sup> ) for distances of 1, 2, 5, 10, and 20 miles for the stability class in (8.), and enter in Column A. (NOTE: Real time X $\overline{\mu}/Q$ can be used if known)
(10.)	Divide Column A by the windspeed (m/sec) from (7.), and enter in Column B.
(11.)	Multiply Column B by the I-131 (Ci/sec) from (5.) and enter in Column C, which are the concentrations at 1, 2, 5, 10, and 20 miles downwind.
(12.)	Multiply Column C by $1.1 \times 10^9$ to determine the estimated adult thyroid dose rate from I-131 in mR/hr and enter in Column D.
(13.)	Multiply Column D by 2 to determine the estimated child thyroid dose rate from I-131 mR/hr and enter in Column E.
	The constants used in (12.) and (13.) above have a maximum differ

The constants used in (12.) and (13.) above have a maximum difference of  $\pm 20\%$  from time zero to 120 hours after reactor shutdown; this error is acceptable. The actual values are shown in Figure 3 for information.

	Column A	Column B	Column C	Column D	Column E
Downwind Distance (miles)	$\frac{\underline{x} - \overline{\mu}}{Q}$ (m <sup>-2</sup> )	$\frac{\underline{X} \ \overline{\mu}}{Q} \ (wind speed) \ (sec/m^3)$	I-131 concen- trations (µCi/cc)	Adult thyroid dose rate from I-131 (mR/hr)	Child thyroid dose rate from I-131 (mR/hr)
(112200)		(000)		(uut/ut)	(may me)
1					
2					
5					
10	4				
20			12,4525		

Page 2 of 2

# TABLE 1

# Data Acquisition and Display System at ECC

(Time) Tower	MET TOWER		Baille	(Date) y (Time)
821 ft.	- Wind Velocity -		612	ft.
Ø.Ø <sub>MPH</sub> Ø.Ø		Ø.Ø	MPH	Ø.Ø
821 ft.	- Wind Direction -		612	ft.
ØØ.Ø DEG ØØ.Ø		ØØ.Ø	DEG	ØØ.Ø
821 ft 612 ft.	- Temperature -		612	ft.
ø.ø <sub>°F</sub> ø.ø		Ø.Ø	۰F	ø.ø
STATION VENT FLOW		ØØ.Ø K	CFM	

# Panel in Control Room

0-100	0-360°	-4 to +8	
SI996 Wind Velocity 612' Elev.	ZI997 Wind Direction 612' Elev.	TDI998D Temp 821'-612'	

# Computer Points in Control Room

Computer Point

Wind Velocity, 612' Elev., in MPH	A901
Wind Velocity, 821' Elev., in MPH	A902
Wind Direction, 612' Elev., in degrees	A900
Wind Direction, 821' Elev., in degrees	A903
Temperature, 612' Elev., in °F	T699
Temperature, 821' Elev., in °F	T697
Temp. Diff., 821'-612', in °F	T698
Station Vent Flow, in KCFM	F885

# TABLE 2-A

Pasquill Stability Class vs.  $\Delta T$ 

Class		ΔT = 821'°F minus 612'°F
А	Extremely unstable	< -2.2°F
В	Moderately unstable	-2.2°F to -2.0°F
с	Slightly unstable	-2.0°F to -1.8°F
D	Neutral	-1.8°F to -0.6°F
E	Slightly stable	-0.6°F to 1.8°F
F	Moderately stable	1.8°F to 4.7°F
G	Extremely stable	> 4.7°F

(Derived from NRC Regulatory Guide 1.23)

11

11

TABLE 2-B

	Classification of Atmosphe by Standard Deviation of W	
Stability Classification	Pasquill Categories	SD * (degrees)
Extremely unstable	А	SD ≥ 22.5
Moderately unstable	В	22.5 > SD ≥ 17.5
Slightly unstable	с	17.5 > SD ≥ 12.5
Neutral	D	12.5 > SD > 7.5
Slightly stable	E	$7.5 > SD \ge 3.8$
Moderately stable	F	3.8 > SD ≥ 2.1
Extremely stable	G	2.1 > SD

\*Standard deviation of horizontal wind direction fluctuation over a period of 15 minutes to 1 hour.

## TABLE 3

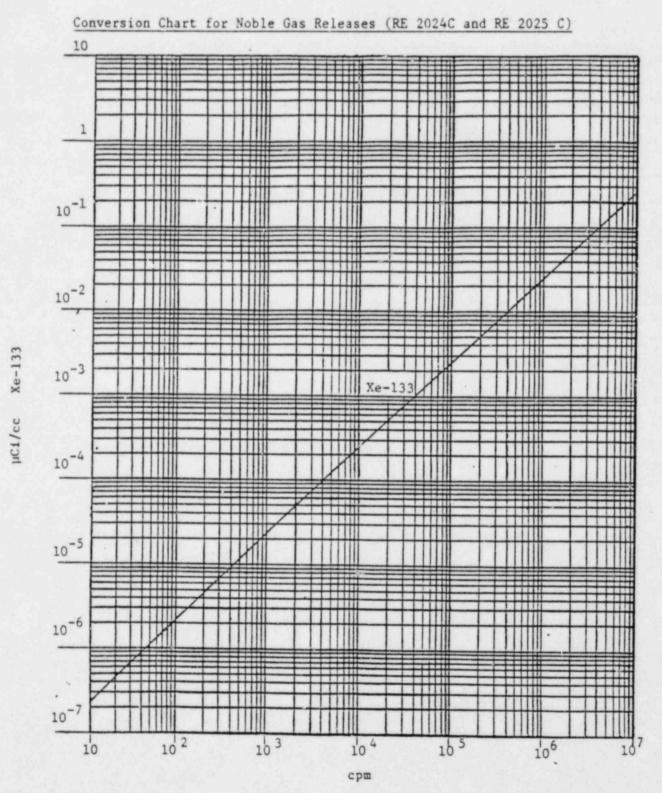
Class	A	В	с	D	E	F	G
1	1.2x10 <sup>-6</sup>	5 _x10 <sup>-6</sup>	2.1x10 <sup>-5</sup>	7.0x10 <sup>-5</sup>	1.3x10 <sup>-4</sup>	3.0x10 <sup>-4</sup>	4.5x10 <sup>-4</sup>
2	6.0x10 <sup>-7</sup>	1.4x10 <sup>-6</sup>	5.0x10 <sup>-6</sup>	2.2x10 <sup>-5</sup>	4.6x10 <sup>-5</sup>	1.0x10 <sup>-4</sup>	1.5x10 <sup>-4</sup>
5	2.9x10 <sup>-7</sup>	3.8x10 <sup>-7</sup>	1.1x10 <sup>-6</sup>	6.0x10 <sup>-6</sup>	2.2x10 <sup>-5</sup>	3.0x10 <sup>-5</sup>	4.5x10 <sup>-5</sup>
10					4.7x10 <sup>-6</sup>		
20	9.0x10 <sup>-8</sup>	1.2x10 <sup>-7</sup>	1.7x10 <sup>-7</sup>	6.8x10 <sup>-7</sup>	2.0x10 <sup>-6</sup>	5.1x10 <sup>-6</sup>	7.65x10-

 $\frac{X\overline{\mu}/Q \ (m^{-2})}{Downwind Distances of 1, 2, 5, 10, and 20 miles}$ 

The values for classes A through F were derived from Figure 5-3, Page 5.22 of EPA-520/1-75-001, Revised 6/79. The values assumed an inversion lid at 1000 meters altitude and a ground level release. The values for class G were determined as per Reg. Guide 1.145 guidelines dated August 1979.



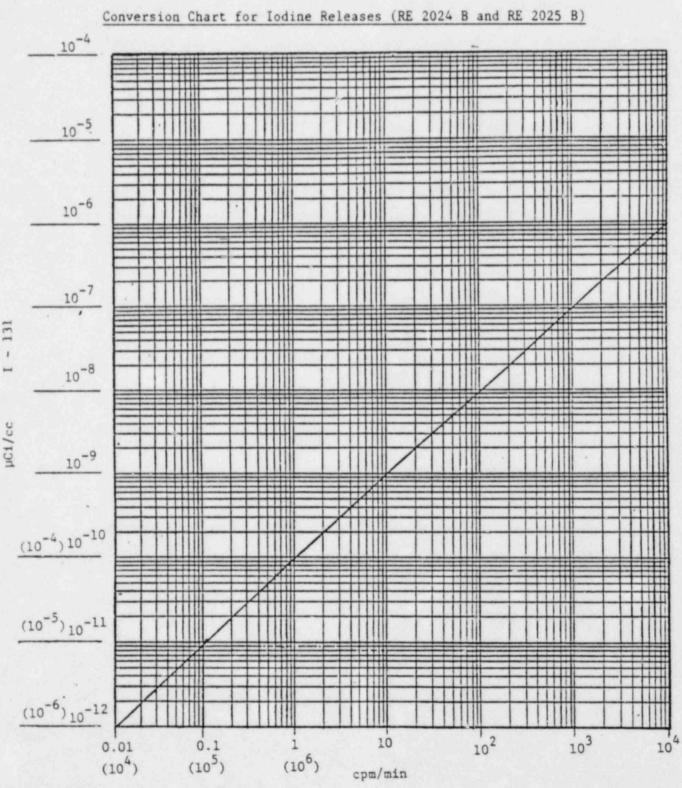
14



<sup>(</sup>Copied from the Victoreen Calibration Manual)



15

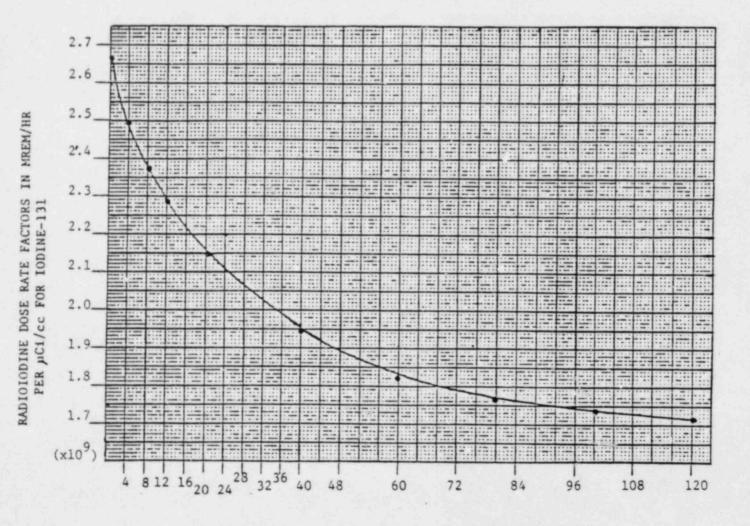


(Copied from Victoreen Calibration Manual)

## FIGURE 3

16

#### Radioiodine Dose Rate Factors for Infant Thyroid Dose Rate vs. Time After Reactor Shutdown



#### HOURS AFTER REACTOR SHUTDOWN

The constant 2.2 x  $10^9$  has a maximum difference of  $\pm 20\%$  from time zero to 120 hours after reactor shutdown for the infant thyroid dose rate. This is based on the worst case of radioiodine activities in the fuel core 90 days after irradiation, Regulatory Guide 1.109 and NUREG-0133.

#### OFFSITE DOSE CALCULATIONS USING TI PROGRAMMABLE CALCULATOR

17

A miniprogram for the TI programmable calculator and its printer has been developed to simplify the offsite dose calculations. The program is divided into six sections which are discussed below. Samples of runs of each section are attached; circled items are inputs. Each section performs a different type of calculation, and each can be performed independently with the exception that either the noble gas or iodine release rate calculation must be performed once before any other section is run.

The program is not permanently stored and must be loaded into the calculator prior to use.

11 NOTE: The program does not include Table 3 Xµ/Q values for stability class G, thus for those instances where a stability class G exists, hand calculations should be performed, however, if time constraints require using the calculator, stability class F should be used. (The values obtained using F stability class will be approximately 50% low.)

LOADING PROGRAM:

11

The program is encoded on both sides of two magnetic cards kept with the calculator. Handle these cards only by the edges. The sides are marked 1-4. To load the program, perform the following steps in order:

- 1) Turn on the printer, and then the calculator (printer switch on right side), then press; 1, 2nd, OP, 17 on the calculator, the calculator should display 879.09.
  - Press "1" and "+/-"
  - 3) Feed the end of the magnetic card labeled "1" into the program slot on calculator side - the calculator will automatically feed the card through the calculator and out the other side - pull the card out by the edges.
    - NOTE: If the calculator read the card properly, the (-1) will be shown in the display; if the (-1) is flashing, the card was read improperly. If this occurs, press clear and reenter the card.
  - 4) Press "2" and "+/-"
  - 5) Repeat the feeding process with side 2 of first card
  - 6) Press "3" and "+/-"
  - 7) Repeat the feeding process with side 3 of second card

Attachment 1 Page 1 of 9

- Press "4" and "+/-"
- 9) Repeat the feeding process with side 4 of second card
- 10) Proceed by pressing A for noble gas or B for iodine release rate calculations, either program will print a line of output on the printer which finalizes the program within the calculator.

18

- 11 11) Finally, run programs E (see page 5 of 9) and 2nd A' (see page 6 of 9) to test that each of the main programs will run with fixed data. These test routines ensure that the program was loaded in the correct sequence into the calculator memory. Compare your printout with the output listed below each of the programs (E and 2nd A'). If an error (an incorrect output line or a flashing display) was encountered during either of the test runs, the user can reload the program (following the above procedure) or if the error continues contact the calculator programmer (Technical Section) for assistance.
- 11 PROCEDURE:

11

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Once the program has been loaded as stated above, start any of the calculations by pressing the A, B, C, or D buttons (top row of calculator) corresponding to the functions described below:

NOTE: To enter data, simply input the values in standard or scientific format, then press "R/S". (If an error is made in the entry, press "CE" and reenter the value.) Also note that the calculator may be used in the normal manual mode without affecting the programming; when manual calculations are complete, to re-initiate a program simply press the button(s) corresponding to the desired calculation.

#### A - NOBLE GAS RELEASE RATE

This program calculates the noble gas release rates in curies/sec from the stack. As input, it requires the countrate from the noble gas monitors (RE2024C, 2025C) and the stack flow rate in KCFM.

FIRST PRESS A N CPM ENTER COUNTRATE IN CPM FROM RE2024C OR 2025C, THEN PRESS R/S 5.52 05 ENTER STACK FLOW RATE IN KCFM FROM COMPUTER S FLO KCFM POINT F885, THEN PRESS R/S 98. 6.383328 OO C/SC ---- OUTPUT IS IN CURIES/SEC

Attachment 1 Page 2 of 9

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#### B - IODINE RELEASE RATE

11

11

This program calculates the iodine release rate in curies/sec from the stack. As input, it requires the countrate from the iodine monitors RE2024B, 2025B) at two different times and the time span between the readings. FIRST PRESS B I CPM ENTER THE INITIAL COUNTRATE FROM RE2024B OR 20. 2025B, THEN PRESS R/S ENTER THE TIME SPAN BETWEEN READINGS, THEN T MIN 10 PRESS R/S I CPM ENTER THE FINAL COUNTRATE FLOW RE2024B OR 2025B. 4.56 06 THEN PRESS R/S 1.9243116-03 C/SC ----> OUTPUT IS IN CURIES/SEC C - PREDICTED OFFSITE DOSE RATES - NOBLE GAS This program calculates the whole body dose rates due to noble gases at various distances from the station. Required inputs are wind speed, stability class, and noble gas release rate. Note that stability class input is numerical with A=1, B=2, C=3, D=4, E=5, F=6. FIRST PRESS C WND SP MPH ENTER THE WIND SPEED IN MILES PER HOUR, THEN PRESS R/S STBCL ENTER THE STABILITY CLASS (NUMEPICAL VALUE), 5 THEN PRESS R/S C/SEC ENTER THE NOBLE GAS RELEASE RATE IN CURIES/SEC, 6.38 THEN PRESS R/S 5.364 M/SC ---- THIS OUTPUT IS WIND SPEED IN METERS/SEC PREDICTED NOBLE GAS CONCENTRATION AT 1 MILE IN 1.5462342-04 UC/C µCi/cc WBDR= - WHOLE BODY DOSE RATE AT 1 MILE IN MILLIREM/HOUR 5.1025727 00 MR/H

> Attachment 1 Page 3 of 9

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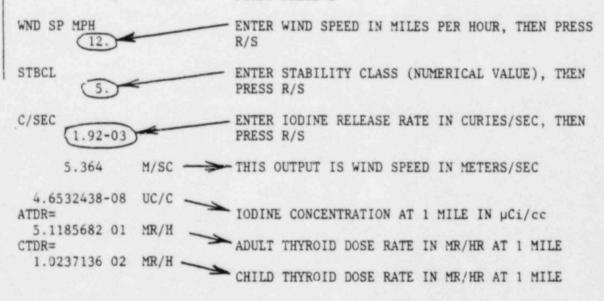
5.4712901-05 UC/C WBDR= SAME AS ABOVE 2 MILES 1.8055257 00 MR/H 2.616704-05 UC/C WBDR= SAME AS ABOVE AT 5 MILES 8.635123-01 MR/H 5.5902312-06 UC/C WBDR= SAME AS ABOVE AT 10 MILES 1.8447763-01 MR/H 2.3788218-06 UC/C WBDR= SAME AS ABOVE AT 20 MILES 7.8501119-02 MR/H

D - PREDICTED OFFSITE DOSE RATES - IODINE

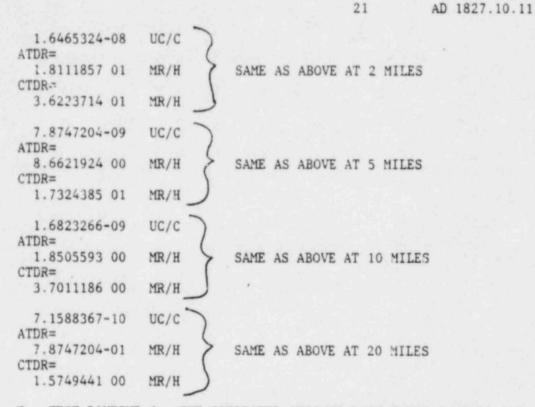
This program calculates the adult and child thyroid dose rates due to iodine at various distances from the plant. Required inputs are wind speed, stability class, and iodine release rate.

Note that stability class input is numerical with A=1, B=2, C=3, D=4, E=5, F=6.

FIRST PRESS D



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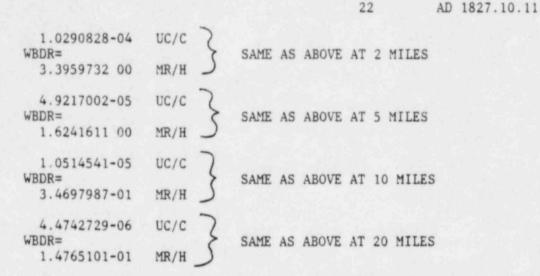


E - TEST ROUTINE C - THE PREDICTED OFFSITE DOSE RATES - NOBLE GAS

This program calculates the whole body dose rates due to noble gases at various distances from the station. The calculator will generate the input from this test run of routine C, so no additional input is needed. Compare your output with the printout listed below.

	TEST C=N G	TEST ROUTINE C
		PRESS E
WND SP MPH	>	THE WIND SPEED IN MILES PER HOUR
STBCL 5.		THE STABILITY CLASS E=5 (NUMERIC VALUE)
C/SEC 1.		THE NOBLE GAS RELEASE RATE IN CURIES/SEC
0.447	M/SC ->	THIS OUTPUT IS WIND SPEED IN METERS/SEC
2.9082774-04 WBDR=	UC/C	PREDICTED NOBLE GAS CONCENTRATION AT 1 MILE IN µCi/cc
9.5973154 00	MR/H	WHOLE BODY DOSE RATE AT 1 MILE IN MILLIREM/HOUR

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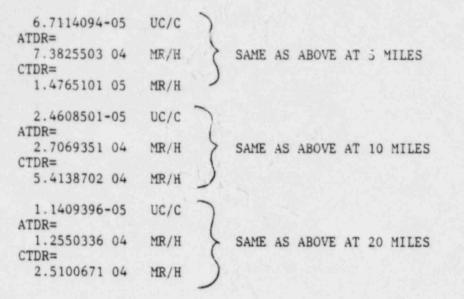
2nd, A' - TEST ROUTINE D - THE PREDICTED OFFSITE DOSE RATES - IODINE

This program calculates the adult and child thyroid dose rates due to iodine at various distances from the plant. The calculator will generate the input for this test run of routine D, so no additional input is needed. Compare your output with the printout listed below.

1	TEST D =	IDN	TEST ROUTINE D
			PRESS 2nd, A'
WND SH STBCL C/SEC	P MPH 1 6 1	>	<ul> <li>THE WIND SPEED IN MILES PER HOUR</li> <li>THE STABILITY CLASS F=6 (NUMERIC VALUE)</li> <li>THE IODINE RELEASE RATE IN CURIES/SEC</li> </ul>
	0.447	M/SC -	THIS OUTPUT IS WIND SPEED IN METERS/SEC
6.71 ATDR=	114094-04	UC/C	- IODINE CONCENTRATION AT 1 MILE IN µCi/cc
	825503 05	MR/H	ADULT THYROID DOSE RATE IN MR/HR AT 1 MILE
1.47	765101 06	MR/H ->	- CHILD THYROID DOSE RATE IN MR/HR AT 1 MILE
2.23 ATDR=	371365-04	UC/C	
2.46 CTDR=	608501 05	MR/H	SAME AS ABOVE AT 2 MILES
	217002 05	MR/H	

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in

### CONDENSED INSTRUCTIONS FOR PERFORMING TI PROGRAMMABLE CALCULATOR DOSE CALCULATIONS

24

LOAD:

11

- 1) Turn on printer and calculator, then press; 1, 2nd, OP, 17 on the calculator, the calculator should display 879.09.
- 2) Press "1" and "+/-", load side 1
  - NOTE : If the calculator read the card properly, the (-1) will be shown in the display.
- 3) Repeat step 2, pressing the corresponding number for side 2, 3, and
- 4) Press either "." or "B"; then press "E" and then "2nd A'" below, to test the program of errors (compare your printout with the one listed with this procedure).

PRESS "A" FOR NOBLE GAS RELEASE RATE

Countrate from RE2024C or 2025C, Press R/S 11 Enter: Enter: Stack flow in KCFM, Press R/S Output: Noble gas release rate in curies/sec

### PRESS "B" FOR IODINE RELEASE RATE

11 Enter: Initial countrate from RE2024B or 2025B, Press R/S Enter: Time between readings, Press R/S Enter: Final countrate from RE2024B or 2025B, Press R/S Output: Iodine release rate in curies/sec

PRESS "C" FOR WHOLE BODY DOSE RATES FROM NOBLE GASES

11 Enter: Wind speed in miles per hour, Press R/S Enter: Stability class\*, Press R/S Enter: Release rate in curies/sec, Press R/S Output: Wind speed in meters/sec Output: Noble gas concentration in µCi/cc and whole body dose rate in mr/hr at 1, 2, 5, 10, and 20 miles

PRESS "D" FOR THYROID DOSE RATES FROM IODINE

11

Enter: Wind speed in miles per hour, Press R/S

- Enter: Stability class\*, Press R/S Enter:
- Release rate in curies/sec, Press R/S
- Output: Wind speed in meters/sec
  - Output: Iodine concentration in µCi/cc, adult thyroid dose rate in mr/hr and child thyroid dose rate in mr/hr at 1, 2, 5, 10, and 20 miles

\*Use numerical value for stability class: A=1, B=2, C=3, D=4, E=5, F=6

Attachment 1 Page 8 of 9

### PRESS "E" TO TEST "C" FOR WHOLE BODY DOSE RATES FROM NOBLE GASES

Enter: No Data Input is needed 11 Output: Whole body dose rate in mr/hr, compare with data on page 5 of 9

### PRESS "2nd, A'" TO TEST "D" FOR THYROID DOSE RATES FROM IODINE

Enter: No Data Input is needed

11

Output: Adult and child thyroid dose rates, both in mr/hr, compare with data on page 6 of 9

### Instructions For Accessing DEC PDP 11/03 For Meterological Data

- Turn phone accessed data terminal on. 1.
- 2. Ensure unit is in ready mode (Press the LOCAL/TALK button on Model 43 terminal).
- Check three options: 3.
  - a) PARITY - off
  - DUPLEX fu'l b)
  - c) BAUD - 300 or 30 CPS
- 4. Dial phone number 898-6240 (Oak Harbor). When the frequency tone is heard, press the DATA button on Model 43 terminal or insert receiver into the acoustic coupler on other models.

5. Correspondence between Computer and Terminal Operator:

а.	Computer will type:	WHO ARE YOU?
b.	Type in:	↑ (an up arrow)
c.	Computer will type:	H = HR, M = MIN, C = CAL
d.	Type in:	H, M, or C (Type only one for either hourly, minute or cal- ibration check)
		Type "H" to request data, by hourly intervals, for the date specified.
		Type "M" to request data, by 15 minute intervals, for the date specified.
		Type "C" to request calibration check (not normally used)
e.	Computer will type:	ACCESSED COMPUTER. TYPE JULIAN DATE REQ.
f.	Type in:	Three digit Julian date (e.g. 001, 072, 365)
g.	Computer will print out data requested and then type:	TRANSMISSION COMPLETE. ALL DONE?Y or N

Attachment 2 Page 1 of 3

N (if more data is needed, then proceed through steps c-g again), or

i. Type in:

h.

k.

- and

Y (if no further data is needed)

j. Computer will type:

Type in:

GOOD DAY

TERMINATING COMMUNICATION.,

Hang up the phone and turn the terminal off, as required.

Attachment 2 Page 2 of 3 .

Sample Output of Meteorological Data (While Accessing DEC PDP 11/03)

For Technical Specification 4.3.3.4

Elev 821' wind speed Elev 821' wind direction Elev 612' wind speed Elev 612' wind direction Elev 821'-612' temperature differential

1	us up	SD	US U	D SD	NS UI	) SD	DT	DT	AMB	10000	IODU CIP	DODEE	Pun
	27.7	2.	24.4	3.	13.0	7.	0.1		30.6		15.4	1	0
	19:	5.	2	02.	19	76.		0.0		11.7	0.00	1	0
2:	26.8	2.	23.4	2.	12.6	7.	0.3		31.1		17.0	1	0
	19	9.	2	04.	19	75.		0.0		13.4	0.00	1	0
3:	25.3	2.	21.7	2.	10.4	7.	2.0		31.7		18.9	1	0
	210	).	2	13.	15	76.		1.1		15.5	0.00	1	0
4:	27.6	3.	24.4	3.	13.9	6.	0.5		35.8		19.7	1	0
	22	٥.	2	27.	21	15.		0.4		17.5	0.00	1	0
5:	31.0	3.	27.9	3.	17.5	5.	-0.1		37.1		20.7	1	0
	22	1.	2	28.	21	18.		-0.0		19.5	0.00	:	0
6:	32.2	3.	29.2	3.	18.5	5.	-0.3		37.5		23.4	1	0
	22:	2.	2	30.	21	17.		-0.1		22.5	0.00	1	0
7:	34.3	3.	31.5	3.	27.9	4.	-0.7		37.9		26.3	1	0
	23	).	2	238.	2:	27.		-0.5		25.8	0.00	1	Û
8:	31.6	3.	29.0	3.	20.7	4.	-0.4		30.4		28.2	1	0
	23	5.	2	45.	23	35.		-0.1		28.0	0.00	1	0
9:	31.3	3.	29.0	3.	21.2	4.	-0.5		35.3		28.8	1	0
	24	1.	2	250.	23	39.		-0.3		28.6	0.00	1	0
0:	29 2	Δ.	27.4	4 .	20.5	5.	-1.1		35.2		29.1	1	0
	25	6.	1	265.	2	\$5.		-0.8		28.7	0.00	1	0
1:	27.2	3.	25.6	4.	19.2	5.	-1.2		35.0		29.1	1	0
	25	6.		264.	2	54.		-0.8		28.7	0.00	1	0
2.	28.0	4.	26.7	4.	21.1	4.	-1.2		34.2		29.1	1	0
					2								

LEGEND

HR : MN	hour, minute (Eastern <u>Standard</u> Time)	NOTE :	Data for PDP 11/03 is read from the Met Tower
100M	100M elev (917')		and stored for three
75M	75M elev (821')		days only. If Met Tower
10M	10M elev (612')		is down, only previous
WS	wind speed (MPH)		information can be
WD	wind direction (degrees)		accessed.
SD	standard deviation		
DT	differential temperature °F		
amb	ambient dry bulb temperature °F		
DW	dewpoint temperature °F		
precip	precipitation		

Attachment 2 Page 3 of 3

AD 1827.11

Davis-Passe Nuclear Power Station

Unit No. 1

Administrative Procedure AD 1827.11

Record of Approval and Changes

Assembly, Accountability and Subsequent Evacuation

# NUCLEAR SAFETY RELATED

Prepared by R. P. Wath	nen/W. H. Green	12/29/75
		Date
Submitted by D. W. Bri	den	5/12/76
	Section Head	Date
Recommended by Jack H	Ivans	5/25/78
	SRB Chairman	Date
QA Approved NA		
	Manager of Quality Assurance	Date
Approved by Jack Ev	78.15	5/25/78
	Station Superintendent	Date

		station Super	rintendent		Da	ite
Revision No.	SEB Recommandation	Date	QA Approved	Date	Sta. Supt. Approved	Date
	alley	8/29/78	1. D. Jana	10/4/	Tomen Stand	10/9/78
-	68 Bar	6/17/80 (	At 8.	1240	Tomun	and gue igo

3 - condument 8/26/82 Colleft/ex 9/10/62 TO munay 15009/13/82 4 and 1/7/83 CT Daft/Jul 1/19/83 TO munay 1/19/83

### 1. PURPOSE & SCOPE

The procedure establishes measures and actions to affect the prompt and orderly assembly of and accounting for personnel located at the Davis-Besse Nuclear Power Station and subsequent evacuation of the station if conditions warrant. Personnel covered by this procedure are TED employees, onsite suppliers/contractors, visitors, or any other individuals within the owner controlled area at the time an emergency is declared.

1

### 2. REFERENCES

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- 2.1 10 CFR 50, Appendix E, "Emergency Plans for Production and Utilization Facilities"
- 2.2 Davis-Besse Nuclear Power Station Emergency Plan
- 2.3 AD 1808.01, "Emergency Duties"
- 2.4 AD 1808.04, "Personnel Identification"
- 2.5 AD 1808.08, "Access Control"
- 2.6 AD 1808.11, "Security Inspection Procedures"
- 2.7 AD 1808.12, "Vehicle Control Procedures"
- 2.8 AD 1827.01, "Annual Radiation Emergency Medical Exercise"
- 2.9 AD 1827.10, "Emergency Offsite Dose Estimates"
- 2.10 AD 1827.12, "Protective Action Guidelines"
- 2.11 AD 1827.13, "Containment Evacuation"
- 2.12 EI 1300 Series, Davis-Besse Emergency Plan Implementing Procedures

### 3. ORGANIZATION AND RESPONSIBILITIES

The DBNPS Organization for coping with emergencies is described in the DBNPS Emergency Plan and Implementing Procedures. Specific responsibilities for haw'ling assembly and/or evacuation are described as follows:

- 3.1 The Shift Supervisor on duty is the interim EDO when an emergency condition exists until relieved by the designated EDO.
- 3.2 The Shift Supervisor/EDO is responsible for controlling the orderly evacuation of personnel.

3.3 Descriptions of the types of emergencies that can require assembly or station evacuation are described in the DBNPS Emergency Plan.

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4. ASSEMBLY AREAS

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### Definition

Those areas designated by this procedure or other procedures to garner personnel resources or to serve as a collection point for performing personnel accountability.

Personnel with Emergency Response Functions shall respond as directed by the Emergency Implementing Procedure, EI 1300 series. Personnel not assigned Emergency Response Functions shall proceed to the following assembly areas (refer to Enclosure 1 & 2).

4.1 Protected Area

Six areas have been designated as assembly areas within the protected area.

- 4.1.1 4th floor Turbine Building
  - a. Two areas in the Turbine Building have been designated assembly areas (see Enclosure 3).
  - b. The area directly adjacent to the Operations Support Center (Lunchroom) is designated for on-shift Fire Brigade Teams (FBT's), First Aid Teams (FAT's), and Radiation Monitoring Teams (RMT's (excluding C&HP members).
  - c. Office personnel and staff (clerical, TED management, and QC) should assembly on the east side of the turbine by the train bay.
  - d. Only FBT leaders, FAT leaders, and RMT leaders should assemble in the OSC along with the OSC manager and his support personnel.
- 4.1.2 Health Physics Monitor Room (603' level)
  - a. All C&HP personnel not assigned specific emergency duties should assemble in the Health Physics Monitor Room.

4.1.3 I&C Lab (623' level)

 All I&C personnel not assigned specific emergency duties should assemble in the I&C Lab.

- 4.1.4 Maintenance Shop (585' level)
  - All Maintenance personnel not assigned specific emergency duties should assemble in the Maintenance Shop.
  - b. All Station Service personnel should assemble in the Maintenance Shop.
- 4.1.5 Fab Shop (Service Bldg. #6) (refer to Enclosure 1)

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a. All contractor employees will assemble in the Fab Shop.

4.1.6 PPF

a. Security personnel without specific emergency duties should report to the PPF.

NOTE :

- All visitors should assembly with their escorts and any miscellane as personnel should assemble on the turbine deck in the area designated for the office personnel.
- 4.2 Owner Controlled Area

Outside of the Protected Area, personnel should assemble in Service Bldg. #2 (Weld Shop), the Construction Office Building, the Warehouse/Storeroom 33, or the Davis-Besse Administration Building. Personnel located outdoors should report to the closest assembly point.

- 4.3 Alternate Assembly Areas
  - 4.3.1 Alternate assembly areas shall be designated when conditions warrant by the Shift Supervisor or EDO utilizing the Station Gai-tronics (PA system) and/or security vehicles' PA systems.
  - 4.3.2 During off-normal hours (6 p.m. 8 a.m.), the facilities outside of the protected area are not normally manned. Therefore all personnel with the exception of those in the DBAB, shall report to the PPF, second floor.
    - NOTE: The Nuclear Security Supervisor should also assign a roving patrol as necessary

to announce any subsequent personnel actions that may be required for those individuals located at construction work areas, warehouses, valve stations, the fire training area, or trailers, etc. Announcements should be made through the use of bull horns or PA system equipped on the Security vehicles.

### 5. ACCOUNTABILITY

The following actions should be initiated at the declaration of a Site or General emergency or as directed by the EDO or Shift Supervisor at lower classifications.

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- 5.1 All personnel should assemble as per Section 4 of this procedure.
- 5.2 The Nuclear Security Supervisor should assign an individual to contact facilities outside of the protected area to inform them of the classification and actions to be taken as per the EDO or Shift Supervisor.
- 5.3 If accountability of the protected area is requested, the Nuclear Security Supervisor should perform or direct the CAS Operator to perform an accountability check.
- 5.4 Within the Protected Area
  - 5.4.1 The senior man present at each assembly area should make a roster of personnel present.
  - 5.4.2 Rosters should be completed as quickly as possible and forwarded to the OSC.
  - 5.4.3 The OSC manager will compare assembly rosters with the computer accountability printout to confirm and/or identify accountability problems within the protected area. (Refer to 1827.16, Search & Rescue if necessary.)
  - 5.4.4 Once accomplished, accountability may be maintained by the following guidelines:
    - a. Limit travel throughout the protected area.
    - b. Evacuate all unnecessary personnel.
    - c. Limit access to the protected area only to those individuals with emergency response

functions or to those individuals needed to perform actions to mitigate or terminate the emergency situation.

5.4.5 In the event that the security computer is not functional, accountability may be accomplished by the following method:

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- a. The Nuclear Security Supervisor is responsible for performing a manual accountability check.
- b. As many security personnel as available will check the card racks located in the PPF for missing cards.
- c. Visitors log books will also be checked.
- d. This list of personnel will be sent to the OSC manager for comparison with the assembly rosters.
- 5.5 Outside the Protected Area accountability will be attempted utilizing the following guidelines:
  - 5.5.1 Warehouse/Storeroom 33
    - a. If assembly is required, personnel should assemble in the office area.
    - b. The Storeroom Foreman or his alternate should be contacted for information receipt and dissemination or for performing accountability within the storeroom.
  - 5.5.2 Weld Shop (Service Bldg. #2)
    - a. If required, personnel in the area of Service Bldg. #2 should assemble in the Weld Shop.
    - b. The Welding Department Foreman or his alternate should be contacted for information receipt and dissemination or for performing accountability within this area.

### 5.5.3 COB

a. If required, personnel should assemble in the lunchroom area located on the first floor.

b. The Facility Modifications Manager or his alternate should be contacted for information receipt and dissemination or for performing accountability within the COB.

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5.5.4 DBAB

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- a. If required, personnel should assemble in the lunchroom located on the second floor.
- b. If the Emergency Control Center or Technical Support Center located on the first floor are activated, personnel located in these areas need not assemble in the lunchroom.
- c. The DBAB Facilities Services Manager or the DBAB Office Services Supervisor should be contacted for information receipt and dissemination or for performing accountability within the DBAB.
- 5.5.5 Results of accountability checks outside the protected area will be relayed to the EDO by phone on ext. 210 or 478.
  - NOTE: Number for personnel to be contacted can be found in Section X of Admin. Memo 37.

### 6. EVACUATION PROCEDURES

- 6.1 Limited Evacuation Procedures
  - 6.1.1 Localized emergencies do NOT normally require a general evacuation, however, conditions such as explosion, fire, toxic gas release, or radioactive material spills or leakage may require that personnel leave a specific building or area. Instructions or directions will be either announced over the PA system (Gai-tronics) or disseminated in the assembly area.
- 6.2 A limited evacuation will require personnel involved with the emergency to leave the area or building by the nearest safe exit and assemble as directed by the Shift Supervisor.
- 6.3 In case of a limited evacuation, evacuees will NOT leave the protected area unless released by their supervisor and shall maintain a safe distance away from the emergency scene and roadway to allow for safe passage and access by emergency equipment.

6.4 In the event of limited evacuation of site buildings or areas, evacuees will NOT leave the Owner Controlled Area unless released by their supervisor and shall maintain a safe distance away from the emergency scene and roadway to allow for safe passage and access by emergency equipment.

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AD 1827.11.4

### 7. GENERAL EVACUATION PROCEDURE

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7.1 If the announcement for a station evacuation is made, visitors and station personnel NOT assigned Emergency Response Functions will proceed out of buildings following the evacuation plan (Enclosure 1) to the PPF for evacuation from the station unless otherwise directed. In the case of non-radiation emergencies or exercises, security badges and TLD's shall be collected by security as personnel pass out the gate. When personnel may have been exposed to radiation, they will keep assigned monitoring devices until they have been checked by C&HP personnel at the DBAB Radiological Testing Laboratory, or other designated locations. Evacuated station personnel and visitors will be directed to leave by the main access road via their private automobiles to their home or designated assembly point to await instructions from the EDO. The hard surface roads, State Route 2, Duff Washa, and State Route 19 may be used for evacuation away from the site proper, if a General Emergency is declared (see Enclosure 4).

7.2. Station personnel who are required to remain in the station to perform emergency duties shall remain in their designated areas, for direction, subsequent evacuation or to assume emergency duties. If directed to evacuate, station personnel will proceed to depart the building(s) following the nearest safe evacuation route unless otherwise notified (see Enclosure 1 and 2).

7.2.3 Nuclear Security Force

7.2.3.a

The Security shall be responsible for directing personnel leaving the protected Area during the general evacuation. In an emergency, the security officers may bypass normal procedures for the exit of employees and visitors, except that personnel should be monitored for contamination. PFF Security Officers shall remain on post and maintain communications with the Shift Supervisor in

8

the control room and the EDO in the ECC, until relieved. Other security officers shall open gates as necessary.

The Security Force, under the direction of the Nuclear Security Supervisor, shall perform the following:

- Open Protected Area gates as necessary for evacuation while maintaining security of opening in accordance with AD 1808, Industrial Security Plan.
- Direct evacuees to a safe area upon exit through the protected area gates.
- Ensure personnel are monitored for contamination unless directed by the EDO, Shift Supervisor, or senior staff member to eliminate monitoring.
- Direct traffic as needed in the parking area.
- 5. Direct all personnel leaving the station to proceed either directly away from the station or to a selected assembly point. (Ascertain the assembly point from the Shift Supervisor/EDO).
- Notify the Operations Support Center of the number of personnel within the protected area.
- Collect all dosimeters and TLD's from evacuating personnel for evaluation and/or further use.

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7.2.3.b

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- Proceed to the DBAB Radiological Testing Lab with the dosimeters and TLD's upon notification to do so by the Shift Supervisor/EDO.
- The Security shall maintain 9. surveillance over protected area gates or fences during and after the evacuation to prevent unauthorized access. As soon as possible, unless a radiation hazard exists, all opened and/or unguarded gates shall be closed and secured according to AD 1808.08, "Access Control". Emergency vehicles shall be controlled during the emergency and evacuation in accordance with AD 1808.12, "Vehicle Control Procedures".

7.2.3.c

The Security Officers shall NOT:

1. Delay the evacuation.

 Require those persons evacuating the station to sign the visitor's log.

#### RE-ENTRY

8.

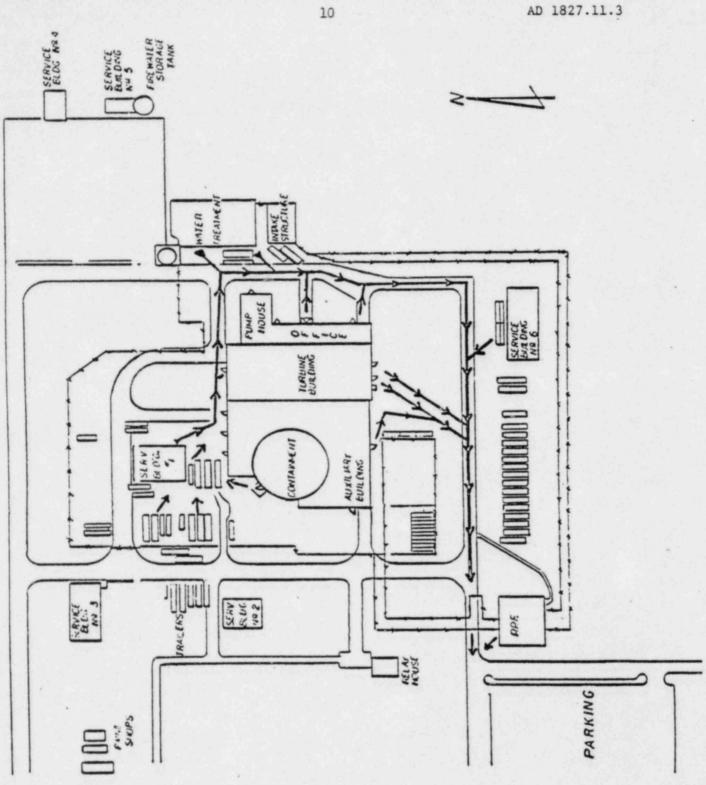
- 8.1 The ELO and Station Operations Manager, under the direction of the Operations Director, have the joint responsibility for determining and declaring when an emergency situation is stable and the station is ready to be re-entered.
- 8.2 Re-entry of personnel shall be through the PPF entrances only according to normal procedures described in AD 1808.04, "Personnel Identification", and EI 1300.10, Re-entry.

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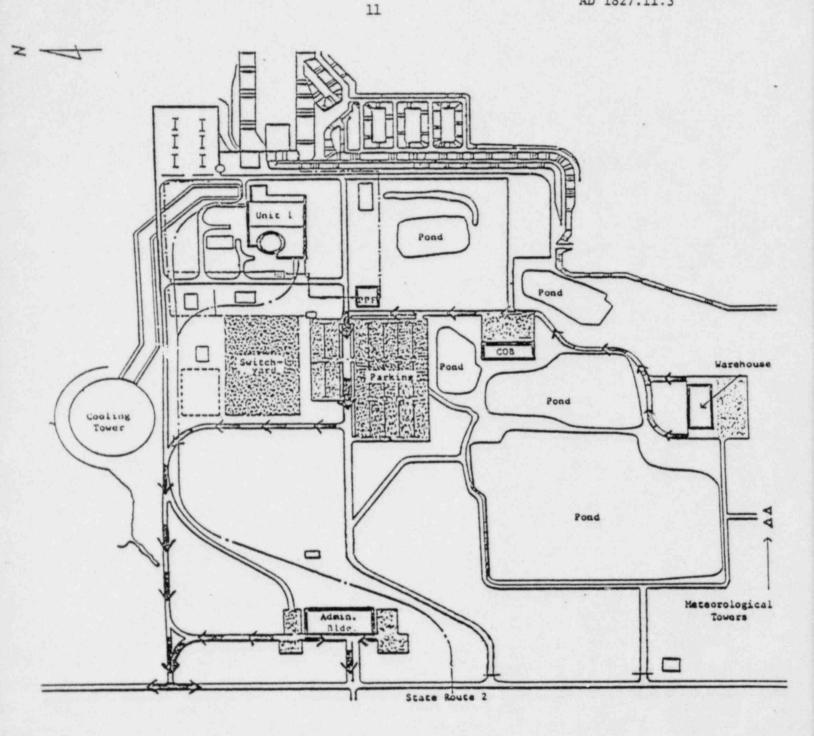
3



Davis-Besse Nuclear Power Station Limited Evacuation Chart

ENCLOSURE 1

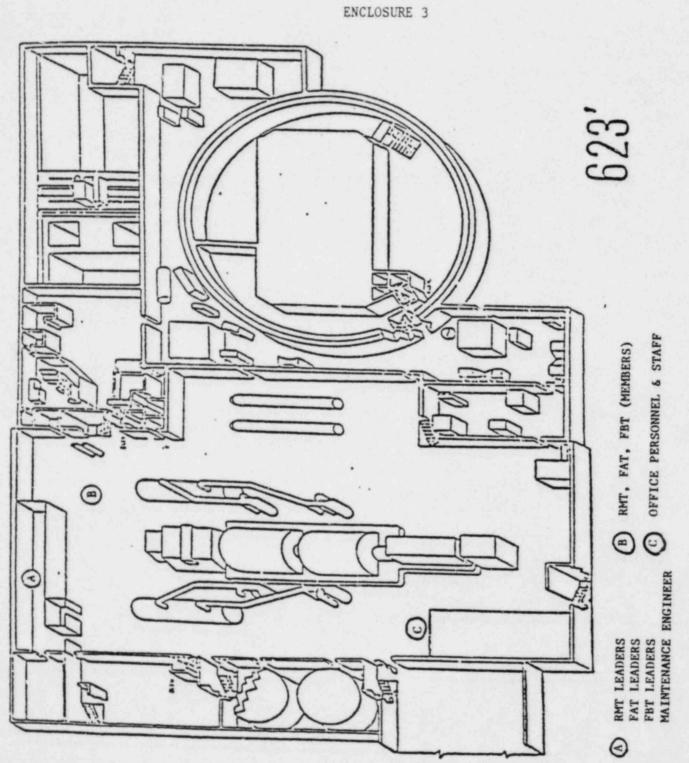
10



### DAVIS-BESSE NUCLEAR POWER STATION

SITE ARRANGEMENT

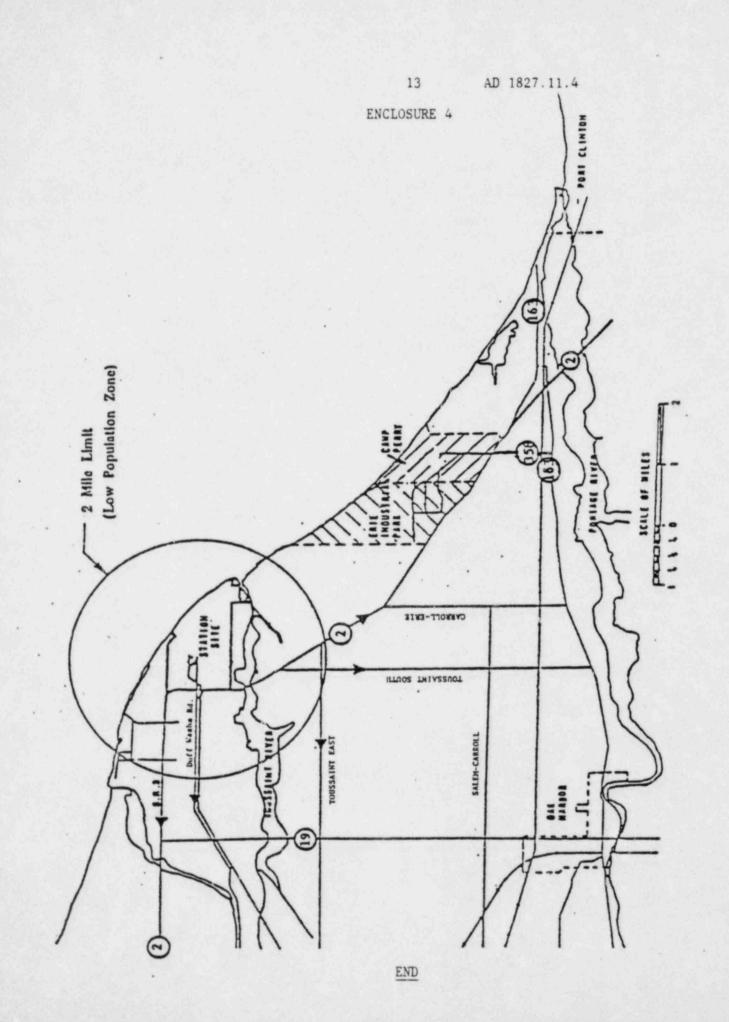
ENCLOSURE 2



TURBINE DECK ASSEMBLY AREAS

12

AD 1827.11.3



AD 1827.12

Davis-Besse Nuclear Power Station

Unit No. 1

Administrative Procedure AD 1827.12

Protective Action Guidelines

### NUCLEAR SAFETY RELATED

Record of Approval and Changes

2/23/76 Prepared by C. Doyel/W. Green Date 3/11/76 Submitted by Section Head Date Recommended by Chairman Date QA Approved . Manager Date uality Approved by Date Station Superintendent Revision SRB QA Sta. Supt. Approved No. Recommendation Date Date Approvad Date 1 10-26-76 26116 2345678 2116179 295 4817 8/39/78 11/21/29 Tomuney 8/16/20 180 EJDA 3 1/2/81 Tome J.Daft 1/2 121 790 SELSey 5 H 6-12-01 NON 0/15/81 12) E 2 Deft 3/22/82 TO Muney/ the 3/24 3/10/82 6/24/82 22 Depr 7/7/82 7181 10/10/82 C.T Daft/Joh 11/3/82 1115182 om 9 7

### PURPOSE

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To define a specific set of guidelines to be followed in determining protective actions to be taken in the event of emergencies involving radioactivity releases at the Davis-Besse Nuclear Power Station (DBNPS).

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- 2. REFERENCES
  - 2.1 10 CFR 20, Standards for Protection Against Radiation
  - 2.2 10 CFR 100, Reactor Site Criteria
  - 2.3 USAEC TID-14844, Calculation of Distance Factors for Power and Test Reactor Sites
  - 2.4 AD 1808.00, Industrial Security Plan
  - 2.5 Davis-Besse Nuclear Power Station Emergency Plan
  - 2.6 AD 1827.10, Emergency Off-Site Dose Estimates
  - 2.7 SAND 77-1725, Public Protection Strategies for Potential Nuclear Reactor Accidents - Sheltering Concepts with Existing Public and Private Structures
  - 2.8 EPA Guidelines September 1975, EPA-520/1-75-001
  - U.S. Food and Drug Administration, Federal Register, Vol. 43, No. 242, Dec. 15, 1978
  - 2.10 Reg Guide 1.109, Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the purpose of Evaluating Compliance with 10 CFR Part 50 Appendix I
- DEFINITIONS
  - 3.1 Decision Dose

That value of projected thyroid dose above which evacuation is beneficial.

3.2 Evacuation Dose

That dose that a potential evacuee would receive if he were openly exposed during the evacuation.

3.3 Evacuation Exposure Period

The period during which the evacuee is exposed to the radioactive plume.

### 3.4 Off-Site

The area outside the Owner Controlled Area as defined in AD 1808.00, Industrial Security Plan.

2

3.5 Projected Exposure Time

That period of time in which the population surrounding DBNPS will be exposed to radiation as a result of an accidental airborne radioactive release. Projected Exposure Time starts when the airborne radioactivity released crosses the Owner Controlled Area Boundary and ends when radiation levels off-site return to normal.

3.6 Sheltering Dose

That dose that an individual would receive if he were to remain within a shelter having ventilation control during the passage of the plume. The method of calculating the sheltering dose is significantly different for the whole body and thyroid dose. This is because a ventilation controlled shelter, i.e. door, windows and ventilation shut, provides thyroid protection for only two hours. After two hours the inhabitant receives the full thyroid dose. For the whole body exposure there is no limit on the resident's time in the shelter.

### 4. RESPONSIBILITIES

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4.1 In the event an emergency is declared at DBNPS that involves the release of radioactivity or radiation, the Emergency Duty Officer (EDO) and his assisting personnel shall use the calculating methods found in AD 1827.10, Emergency Off-Site Dose Estimates, to calculate the instantaneous radiation exposure rates for various offsite locations. (In the event of an emergency during off-normal hours, this calculation is the responsibility of the Shift Supervisor while acting as EDO until such time as he is relieved by the EDO.)

> The results of these calculations should be utilized as specified in Section 6. for evacuation and shelter recommendations, and compared with the guidelines given in Sections 5. and 7. to determine the proper protective actions required to protect the health and safety of Station personnel and the general public. However, in the event that time does not permit the use of the Section 6 Data Sheets (i.e., if the plume is moving relatively fast towards the public and especially large population centers), protective actions should be based on an immediate comparison of the dose projections calculated in AD 1827.10 with the criteria given in Section 5.1 of this procedure.

The EDO shall then implement those actions for Station personnel and communicate the recommended off-site actions to the Ottawa County Sheriff's Department (or the State and County Emergency Operations Centers if they have been activated).

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4.2 In order to simplify evacuation instructions for the public, evacuation "subareas" (see Figure 1) have been established by municipal and geographical boundaries. When making evacuation decisions in an emergency situation, the EDO shall consider the time available (based on plume travel speed) to evacuate the affected subarea(s), in comparison to the estimated evacuation times as given in Table 1. The data sheets used in Section 6. assist in this process.

### 5. PROTECTIVE ACTION GUIDELINES

5.1

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Recommended Protective Actions for the Plume Exposure Pathway (10 mile) Emergency Planning Zone to avoid whole body and thyroid dose from exposure to a gaseous plume:

Projected Dose (Rem) to the Population	Recommended Actions <sup>(a)</sup>	Comments
Whole body <1	No planned protective actions. Issue an	Previously recommended
Thyroid <5	advisory to seek shelter and await further instructions. Monitor environmental radiation levels.	protective actions may be recon- sidered or terminated.
Whole body 1 to <5	Seek shelter as a min- imum. Consider evacu- ation. Evacuate unless	If con- straints exists,
Thyroid 5 to <25	constraints make it impractical. Monitor environmental radia~ tion levels. Control access.	special considera- should be given for evacuation of children and preg- nant women.
Whole body 5 and above	Conduct mandatory evacuation. Monitor environmental radia-	Seeking shelter would be an
Thyroid 25 and above	tion levels and adjust area for mandatory evacuation based on these levels. Control access.	alternative if evacua- tion were not immedi- ately pos- sible.

.....

(a) These actions are recommended for planning purposes. Protective action decisions at the time of the incident must take existing conditions into consideration.

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- (b) At the time of the incident, officials may implement low-impact protection actions in keeping with the principle of maintaining radiation exposures as low as reasonably achievable.
- Guidelines for protection against ingestion of contamination for the Ingestion Exposure Pathway (50 mile) Emergency Planning Zone:
  - I. Ground Contamination

5.2

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- A. Action Levels
  - 1. Projected whole body dose above the ground ≧lrem
  - 2. Ground Contamination levels  $\geq 2000 \ \mu Ci/m^2$  at t = 1 hr post-accident
  - Exposure rate ≥12 mR/Hr at 1 meter above ground at t = 1 hr post-accident
- B. Recommended Protective Actions
  - 1. Evacuation of affected areas
  - Restriction of entry to contaminated off-site areas until radiation level has decreased to State approved levels
- II. Food and Water Contamination

A. Action Levels

	Concentrat Milk or					
	(0.5 rem WB	(5 rem WB				
	or bone: 1.5 rem thyroid)	or bone: 15 rem thyroid)		Intake a all Water		ture ass
	Preventive	Emergency	Path	And and a second s	(Fresh	Weight)
Nuclide* I-131	Level (µCi/1)	Level (µCi/1)	Preventive (µCi)	Emergency (µCi)	Preventive (µCi/kg)	Emergency (mCi/kg)
(thyroid)	0.012	0.12	0.09	0.9	0.27	2.7

If other nuclides are present, Reg. Guide 1.109 will be used to

calculate the dose to the critical  $\operatorname{organ}(s)$  .  $\underline{Infants}$  are the critical segment of the population

	Concentrat Milk or					
	(0.5 rem WB or bone: 1.5 rem thyroid) Preventive	(5 rem WB or bone: 15 rem thyroid) Emergency		and the second sec	Gi	sture rass Weight)
Nuclide* Cs-137	Level (µCi/1)	Level (µCi/1)	Preventive (µCi)	Emergency (µCi)	Preventive (µCi/kg)	Emergency (µCi/kg)
(Whole Body) Sr-90	0.34	3.4	7.0	70	3.5	35
(bone) Sr-89	0.007	0.08	0.2	2.0	0.7	7.0
(bone)	0.13	1.3	2.6	26	13	130

B. Recommended Protective Actions

### Preventive

### Emergency

1.	Removal of lactating dairy cows from con-	Isolate food and water from its introduction
	taminated pasture and substitution of uncon-	into commerce after considering:
	taminated stored feed.	
2.	Substitute source of uncontaminated water.	a. availability of other possible
3.	Withhold contaminated	actions;
	milk from market to allow radioactive decay.	b. importance of par- ticular food in
4.	Divert fluid milk to	nutrition;
	production of dry whole	c. time and effort to
	milk, butter, etc.	take action; d. availability of
		other foods.

### 5.3

7

Representative shielding factors from airborne radionuclides:

Structure or Location	Shielding(a) Factor	Representative Range
Outside	1.0	
Vehicles	1.0	
Wood-frame house <sup>(b)</sup> (no basement)	0.9	-

AD 1827.12.7

Structure or Location	Shielding(a) Factor	Representative Range
Basement of wood house	0.6	0.1 to 0.7 <sup>(c)</sup>
Masonry House (no base- ment)	0.6	$0.4 to 0.7^{(c)}$
Basement of masonry house	0.4	0.1 to 0.5 <sup>(c)</sup>
Large office or indus- trial building	0.2	0.1 to 0.3 <sup>(c, d)</sup>

6

- (a) The radio of the dose received inside the structure to the dose that would be received outside the structure.
- (b) A wood frame house with brick or stone veneer is approximately equivalent to a masonry house for shielding purposes.
- (c) This range is mainly due to different wall materials and different geometries.
- (d) The shielding factor depends on where the personnel are located within the building (e.g., the basement or an inside room).
- Representative shielding factors for surface deposited radionuclides:

5.4

7

Structure or Location	Representative or Location Shielding Factor(a)		
l m above an infinite smooth surface	1.00		
1 m above ordinary ground	0.70	0.47-0.85	
1 m above center of 50-ft roadways, 50% decontam- inated	0.55	0.4-0.6	
Cars on 50-ft road:			
Road fully contaminated	0.5	00.7	
	0.5	0.4-0.6	
Road fully decontaminated	0.25	0 2-0.5	
Trains	0.40	0.3-0.5	

AD 1827.12.9

Structure or Location	Representative (a) Shielding Factor	Representative Range
One and two-story wood- frame house (no basement)	0.4 <sup>(b)</sup>	0.2-0.5
One and two-story block and brick house (no base- ment)	0.2 <sup>(b)</sup>	0.04-0.40
House basement, one or two	0.1 <sup>(b)</sup>	0.03-0.15
walls fully exposed: One story, less than 2 ft of basement, walls exposed	0.05 <sup>(b)</sup>	0.03-0.7
Two stories, less than 2 ft of basement, walls exposed	0.03 <sup>(b)</sup>	0.02-0.05
Three- or four-story structures, 5000 to 10,000 ft <sup>2</sup> per floor:		
First and second floors: Basement	0.05 <sup>(b)</sup> 0.01 <sup>(b)</sup>	0.01-0.08 0.001-0.07
Milti-story structures, >10,000 ft <sup>2</sup> per floor: Upper floors	0.01 <sup>(b)</sup>	0.001-0.02
Basement	0.005 <sup>(b)</sup>	0.001-0.015

(a) The ratio of dose received inside the structure to the dose that would be received outside the structure.

(b) Away from doors and windows.

5.5

a

9

Distribution of Potassium Iodide Tablets

- 1. The EDO will recommend Station personnel (who have no known thyroid problems) to take a KI tablet if, (a) the known iodine concertration will exceed 1 x  $10^{-5} \mu$ Ci/cc for greater than one hour, or (b) the total known dose to an adult thyroid will exceed 25 rems.
- Base the distribution of KI on actual thyroid doses, not projected doses. AI is 90% effective if administered within one hour after the uptake, and 50% effective if administered within 4 hours after uptake.

 Call RENS Corporation if KI is administered for further directions regarding usage.

### 6. PROCEDURE

6.1 Whole Body Dose

Complete Data Sheet 1.

6.2 Thyroid Dose

Complete Data Sheet 2.

6.3

7

Protective actions should be recommended as developed by Data Sheet 1 and 2. Additional guidance is as follows:

8

ACCIDENT PHASE	EXPOSURE PATHWAYS	EXAMPLES OF ACTIONS TO BE RECOMMENDED
EMERGENCY PHASE <sup>1</sup> (0.5 to 24 hours)*	Inhaiation of gases, radio- iodine, or par- ticulate	Evacuation, shelter, access control, res- piratory protection, prophylaxis (thyroid protection)
/	Direct whole body exposure	Evacuation, shelter, access control
	Ingestion of milk	Take cows off pas- ture, prevent cows from drinking sur- face water, discard contaminated milk, or divert to stored products such as cheese
INTERMEDIATE PHASE <sup>2</sup>	Ingestion of fruits and vegetables	Wash all produce, or impound produce, delay harvest until approved, substitute uncontaminated pro- duce
	Ingestion of water	Cut off contaminated supplies, substitute from other sources, filter, demineralize
(24 hours to 30 days)*	Whole body expo- sure and inhala- tion	Relocation, decon- tamination, fixing of contamination, deep plowing

Emergency phase - Time period of major release and subsequent plume exposure.

Intermediate phase - Time period of moderate continuous release with plume exposure and contamination of environment.

(over 30 days)*	Whole body expo- sure from deposi- tion material or inhalation of re- suspended material	Relocation, access control, decontam- ination, fixing of contamination, deep plowing
LONG TERM PHASE <sup>3</sup>	Ingestion of food and water con- taminated from the soil either by resuspension or uptake through roots	Decontamination, condemnation, or destruction of food; deep plowing, con- demnation, or al- ternate use of land
ACCIDENT PHASE	FXPOSURE PATHWAYS	EXAMPLES OF ACTIONS TO BE RECOMMENDED

<sup>3</sup> Long Term Phase - Recovery period.

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"Typical" Post-accident time periods.

### DATA SHEET 1 Evacuation vs Shelter Decision Guide For Whole Body Exposure

10

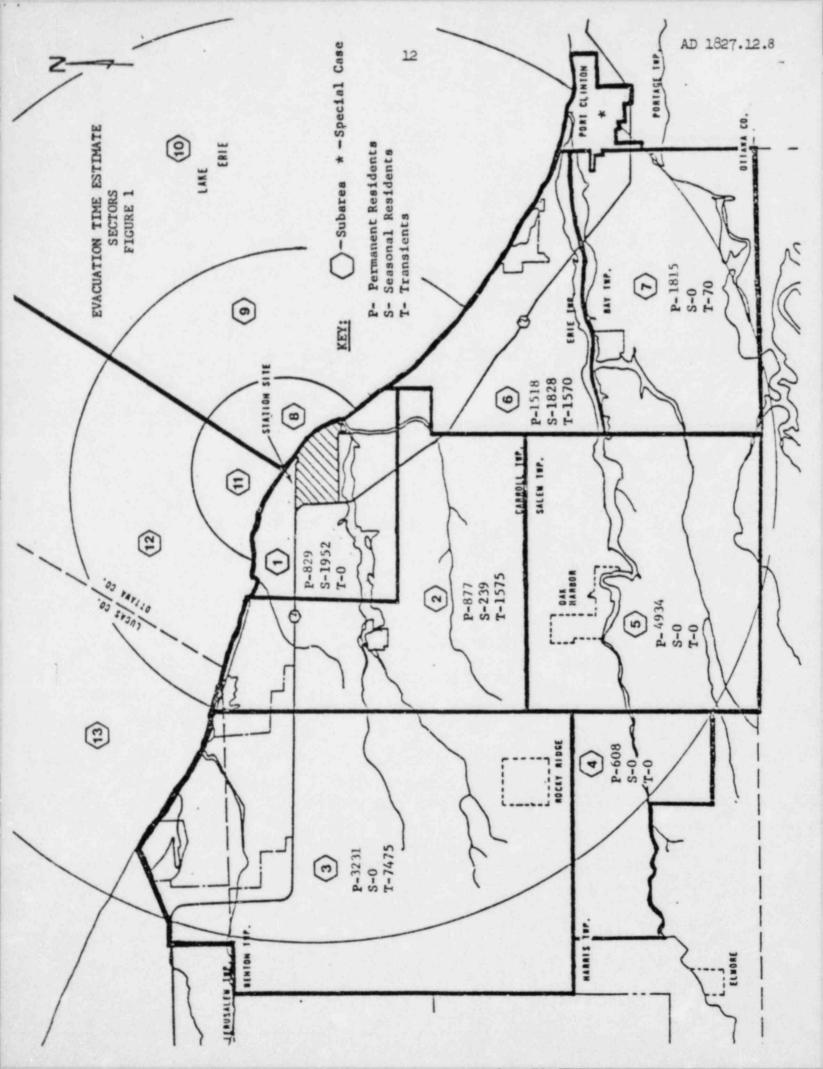
1. Evacuation Subarea from Figure 1 2. Approximate Distance to Population of Interest (1, 2, 5, or 10 miles) miles NOTE : Use the distance in which the projected exposure levels calculated in AD 1827 10 are above the Protective Action Guidelines given in Section 5.1. A data sheet should be calculated for each affected radii. 3. Calculate Whole Body Dose Rate: (D=MR/HR from Step 14, Data Sheet 1 of AD 1827.10, Emergency Off-site Dose Rate Estimate)= mR/HR 4. Release Duration (If not known assume 2 hrs.) hours 5. Projected dose = dose rate x duration = Items 3 x 4 = REM 1000 1000 6. Wind Speed MPH Distance (item 2) 7. Plume Travel Time = Wind Speed (item 6) = hours 8. Time since, or till, beginning of release. If release has begun: a . Release has been in progress hours b. If release will hearin later: Release will start in hours 9. Time till exposure begins: а. If release has begun: Time = Item 7 - Item 8a = hours NOTE : Show minus sign in answer if Item 8a is greater than Item 7. b. If release will begin later: Time = Item 7 + Item 8b = hours 10. Evacuation Weather Conditions: Normal Severe (Circle One) Adverse

9 |

### DATA SHEET 1 (Continued)

11.		ormation from Items 1 and 10 to get Es ion Time from Table 1.	timated	hours			
12.		e Time: - Item 9 =		hours			
	NOTE :	If Item 9 is negative, keep in mind number gives a positive result. If Item 11, enter zero hours.					
13.	Take th	Evacuation Exposure Period (EEP): Take the smaller of Exposure Time (Item 12) or Release Duration (Item 4)hours					
14.	Evacuat	ion Dose = EEP hours x Dose Rate = (Ito REM 1000	em 13) x 100				
15.		ing Dose = ed Dose x Structure Shielding Factor (	from	REM			
	NOTE :	Since the housing in the 10 mile Emeris basically wood homes, a structure 0.9 should normally be used.					
16.		he above information and following tab ne the protective actions to be recomm					
	IF		THEN				
	a.	Projected Dose (Item 5) less than 1 rem	a.	NO ACTION			
	b.	Sheltering Dose (Item 15) is greater than 1 rem but less than 5 rem	b.	Evacuate children and women of child-bearing age if possible; shelter others			
	с.	Sheltering Dose greater than 5 rem, and Evacuation Dose (Item 14) less than Sheltering Dose	c. ·	Evacuate if pos- sible, otherwise shelter			
	d.	Sheltering Dose greater than 5 rem and Evacuation Dose greater than or equal to Shelter Dose	d.	SHELTER			

9



### TABLE 1 Evacuation Time Estimates

Land Sub-Areas	Population*	Normal	Adverse	Severe
1	2,781 829 829	2 hr. 55 min.	4 hr. 10 mín.	15-20 hr.
2	2,681 877 877	3 hr. 5 min.	4 hr. 50 min.	30-40 hr.
3	10,706 3,231 3,231	3 hr. 35 min.	6 hr. 30 min.	35-45 hr.
4	608 608 608	2 hr. 50 min.	4 hr. 15 min.	10-15 hr.
5	4,934 4,934 4,934	3 hr. 30 min.	4 hr. 30 min.	40-45 hr.
6	4,916 1,518 1,518	3 hr. 30 min.	5 h:. 10 min.	30-40 hr.
7	1,885 1,815 1,815	4 hr.	6 hr. 25 min.	50-60 hr.
TOTAL EPZ	28,511 13,812 13,812	5 hr. 15 min.	10 hr. 55 min.	75-100 hr.
Lake Sub-Areas 8 thru 13	Boater Varies		Adverse N/A	Severe N/A
Special Case	Popula		Adverse	Severe
Port Clint	on 10,328 7,223 7,223		5 min. 6 hr.	24-30 hr.

\*Population varies due to location and transient resident variations due to season and unfavorable weather conditions.

\*\*Time ranges are provided due to the uncertain nature of severe weather conditions (e.g., during a severe snow fall or blizzard, the time it takes to evacuate can vary depending on the direction and speed of the wind).

8

Land

8

### DATA SHEET 2 Evacuation vs Shelter Decision Guide For Thyroid Dose

14

1.	Evacuation subarea from Figure	1		
2.	Complete Data Sheet 1			
3.	Release Duration from Data She (If not known assume 2 hours)	et 1, Item 4	hours	
4.	Evacuation Exposure Period (EE Sheet 1, Item 13	P) from Data	hours	
5.	Calculated Thyroid Dose Rate ( Sheet 2, AD 1827.10)	Step 12, Data -	and and the support of the support of	Adult Child
6.	Projected Thyroid Dose = <u>Item</u>	3 x Item 5 =	And in case of the second s	Adult Child
7.	Decision Dose is that value of Dose above which evacuation is Decision Dose depends on the R follows:	beneficial. The		CHIIG
	Release Duration (hours)	Decision Dose (rem)		
	2 3	75		
	3	45		
	4	38		

	1	20
	4	38
	5	34
	6	32
	8	30
	12	28
	24	27
above	24	25
		Decision Dose =

8.

IF

a.

9

Using the above information and following table, determine the protective actions to be recommended:

> THEN Projected Thyroid Dose (Item 6) less a. NO

NO ACTION

REM

than 5 rem

### DATA SHEET 2 (Continued)

IF		THEN	
b.	Projected Thyroid Dose greater than 5 rem but less than 25 rem	b.	EVACUATE CHILDREN AND WOMEN OF CHILD- BEARING AGE IF POSSIBLE, SHELTER OTHERS
c.	Projected Thyroid Dose greater than 25 rem, but less than the Decision Dose (Item 7)	c.	EVACUATE IF POSSIBLE OR OTHERWISE SHELTER
d.	Projected Thyroid Dose greater than Decision Dose, then	d.	Perform action as follows:
	<ol> <li>If EEP less than Release Duration</li> </ol>		1. EVACUATE
	2. If EEP equal to Release Duration		2. SHELTER

AD 1827.13

Davis-Besse Nuclear Power Station

Unit No. 1

Administrative Procedure AD 1827.13

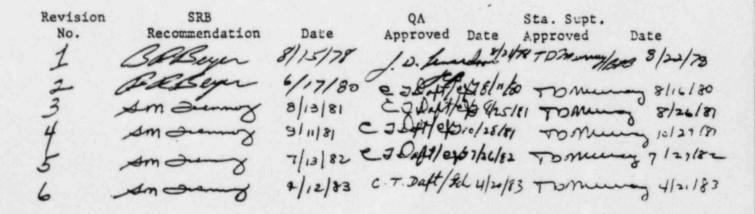
Containment Evacuation

.

## NUCLEAR SAFETY RELATED

Record of Approval and Changes

Prepared by R. P. Wathen/W. H. Green	12/30/75
	Date
Submitted by D. W. Briden	-4/6/76 Date
Section Head	Date
Recommended by TO Muney SRE Chairtan	
OA Approved NA DWB	
Approved by Manager of Quality Assura	A10/76
Station Superintendent	Date/



#### 1. PURPOSE & SCOPE

This procedure sets forth the actions and measures which assure that Containment (the area enclosed by the Containment Vessel and the Shield Building) is safely evacuated by station personnel working inside, in case of emergency, or increase in radiation levels in Containment beyond allowable levels. The procedure further describes actions which assure that decontamination of exposed and contaminated personnel is accomplished.

1

#### 2. REFERENCES

- 2.1 10 CFR 50 Appendix E, "Emergency Plans for Production and Utilization Facilities"
- 2.2 DBNPS-FSAR, Appendix 13D, "Emergency Plan" Section 7.8, "Nuclear Instrumentation" Section 11.4, "Radioactive Waste Monitors" Section 12.0, "Radiation Protection"
- 2.3 SP 1104.21, "Containment Purge System Procedures"
- 2.4 SP 1104.41, "Containment Vessel Hatches"
- 2.5 MP 1402.06, "Equipment Hatch Removal and Replacement"
- 2.6 HP 1601.01, "Guides and Limits for Exposure to Radiation"
- 2.7 HP 1601.04, "Radiation, Contamination and Airborne Radioactivity Areas"
- 2.8 HP 1601.03, "Radiation Exposure Permit Procedure"
- 2.9 HP 1602.01, "External Personnel Radiation Exposure Monitoring"

2.10 PT 5179.01, "Area Radiation Surveys"

2.11 PT 5179.02, "Contamination Surveys"

2.12 PT 5179.03, "Airborne Radioactivity Surveys"

2.13 HP 1604.01, "Personnel Decontamination Procedure"

2.14 AD 1827.11, "Assembly, Accountability & Subsequent Evacuation"

2.15 AD 1827.12, "Protective Action Guidelines"

#### 3. ORGANIZATION AND RESPONSIBILITIES

3.1 Working Personnel

Containment evacuation is the responsibility of the personnel working inside the Containment. The personnel in the Containment shall take prompt action to remove themselves from Containment whenever the Containment Evacuation Alarm is sounded or their personnel monitoring equipment indicates that a dose limit has been reached or an excessive level of radiation or airborne activity exists.

#### 3.2 Shift Supervisor

2

The supervision of the control room operation, particularly as regards radiological monitoring during work in Containment, is the responsibility of the Shift Supervisor. He shall evaluate any changes reported by the Control Room Operator (CRO) and the Chemist and Health Physicist (C&HP) in order to coordinate emergency activities relating to the evacuation of Containment. He is responsible for keeping the Station Superintendent informed of emergency conditions and announcing the location and nature of emergencies over the PA System.

3.3 Control Room Operator

The constant monitoring of radiation conditions in Containment is the responsibility of the CRO, particularly when personnel are working inside containment. He shall evaluate changes in radiation levels detected by containment atmosphere detectors as well as out of core neutron instrumentation in order to be able to signal evacuation.

#### 3.4 Work Supervisor/Foreman

The leader or foreman of each work group present in Containment shall assure the evacuation of any or all personnel upon hearing evacuation alarms, or upon personal verification that excessive radiation levels exist. The working supervisor will normally be the last man out of Containment.

#### 3.5 Chemist and Health Physicist (C&HP)

The monitoring of radiation dose and exposure for all personnel working in Containment is the responsibility of the C&HP in accordance with HP 1602.01, "External Personnel Radiation Exposure Monitoring". As part of the personnel monitoring program, REP and personnel dosimeters are issued by the C&HP to all personnel entering Containment in accordance with HP 1601.03, "Radiation Exposure Permit Procedure".

The C&HP will not monitor or check containment during reactor operation due to the high neutron and gamma radiation levels. With special permission of C&HP management, entry can be made into containment for very short periods of time, according to the FSAR, Section 12.0, "Radiation Protection", to evaluate containment radiation levels in accordance with PT 5179.01, "Area Radiation Surveys", PT 5179.02, "Containment Surveys," and PT 5179.03, "Airborne Radioactivity Surveys".

The C&HP is further responsible for the monitoring and/or decontamination of personnel after evacuation from Containment in accordance with Section 12.3 of the FSAR, HP 1602.01, "External Personnel Radiation Exposure Monitoring", and HP 1604.01, "Personal Decontamination Procedures".

#### 4. CONTAINMENT ACCESS

5

The following paragraphs describe the accesses to the Containment which may be used for evacuation with the limitations as noted.

- 4.1 Personnel lock Elevation 603, southeast side of Containment. This is the normal access for personnel entering and leaving the Containment during operation and shutdown. The lock area has room for about ten persons with an automatic pressurization and purging system. Ref: SP 1104.41, "Containment Vessel Hatches". (See Enclosure 1).
- 4.2 Emergency Lock Elevation 585, northwest side of Containment. This exit is a 5' diameter pressurized vessel for emergency access only, for personnel working at level 585, and for personnel working at lower levels during shutdown. The lock area will facilitate only 2 or 3 personnel since the access doors swing inward. (See Enclosure 2.)
- 4.3 Equipment Hatch Elevation 603, southeast side of the Containment. This hatch can be used for evacuation only during reactor shutdown when the hatch has been opened for equipment handling. The hatch is normally secured and locked and is removed and replaced in accordance with MP 1402.06, "Equipment Hatch Removal and Replacement". (See Enclosure 1.)
- 4.4 Mechanical Penetration Hatches (205A & 201B) Elevation 565, east and west side of the Containment and (308A & 307A) -Elevation 585 - southeast and southwest sides of Containment. (See Enclosure 2 and 3). These doors provide access and exit to and from the annulus area only but do NOT provide access to the containment vessel, and are normally secured and locked. During shutdown or emergencies, these doors may be opened for access and shall be used for evacuation from the annulus area during these periods. Since the annulus may be a high radiation area during reactor operation, these doors can be opened only in emergencies and for short periods after purging in accordance with SP 1104.21, "Containment Purge System Procedure".

#### 5. EVACUATION ALARM AND PROCEDURE

5.1 Alarm Criteria

4

5.1.1 Manual System

The control room operator shall monitor containment radiation instrumentation at all times during reactor operation as described in the FSAR, Section 12.0, "Radiation Protection", whenever personnel are in Containment. He shall initiate the Containment Evacuation Alarm and announce verbally the extent of evacuation required when the following symptoms are verified:

4

- Alarm for high gamma radiation on any containment radiation monitors.
- High count rate in the source range instrumentation
- Increasing count rate (3 dpm) in the criticality monitoring system during startup (refueling only)
- High radiation level in the gaseous/airborne monitoring instrument in the containment ventilation system.
  - NOTE: Operator needs to verify that the readings are valid before evacuating Containment. Setpoints will vary with plant conditions and age.

#### 5.1.2 Automatic Alarm System

The affected radiation monitor will automatically sound an alarm outside the entrance to the personnel hatch or outside the entrance to the equipment hatch. The Control Room Operator will receive an alarm at the FDS/RMS Console CRT and Printer. The monitors also provide a readout in the Control Room and at the personnel/equipment hatch entrance for verifying conditions.

#### 5.2 Personnel Evacuation Procedure

5.2.1 Upon hearing the Containment Evacuation Alarm, personnel will immediately lay down all work equipment, secure, open, or close any critical switches or valves and proceed to the personnel lock at level 603 and/or

evacuate through the equipment hatch at level 603, if open. (See Enclosure 1).

- 5.2.2 Evacuation will commence immediately through the personnel lock which will be operated in accordance with SP 1104.41, "Containment Vessel Hatches".
- 5.2.3 The foreman/leader/supervisor present in each work group shall assure that his personnel have been accounted for and/or entered the personnel lock before the inner door is closed and secured. He shall leave Containment only when all of his personnel have been accounted for.
- 5.2.4 Upon exiting the personnel lock, all personnel shall proceed immediately to the Disrobing Area for a contamination check in accordance with HP 1602.01, "External Personnel Radiation Exposure Monitoring". At this time, the foreman/leader shall notify the control room by phone that Containment has been evacuated, and to await action by the C&HP personnel regarding their exposure and conditions in and around Containment.
- 5.2.5 The emergency lock at level 585 may be used for evacuation only if the route to the personnel lock is cut-off or impassable. Procedure for use of the emergency lock is also described in SP 1104.41. Personnel exiting by the Emergency Lock should stay in that area until released by C&HP, notify the Shift Supervisor of their evacuation and the conditions inside Containment. (See Enclosure 2).
- 5.3 Control Room Action .

- 5.3.1 The control room operator monitoring an unsafe condition in Containment shall:
  - Check the instrumentation readout(s) for supporting evidence of the condition.
  - 2. Check the alarm for failure.
  - 3. Upon confirming the emergency condition, initiate the Containment Evacuation Alarm.
- 5.3.2 The control room operator, after the evacuation alarm sounds, shall take immediate action to correct the situation, reduce the radiation levels and restore the

station to normal conditions in accordance with the Emergency Implementing Procedures, EI 1300 series.

- 5.3.3 Notify the Shift Supervisor, Station Superintendent or his designee and/or the EDO of the evacuation and reasons for the alarm.
- 5.3.4 Log all data pertaining to the evacuation including the reports verifying evacuation of affected personnel and conditions inside Containment.
- 5.4 Shift Supervisor Action

- 5.4.1 Verify the conditions reported by the control room operator and announce the emergency over the PA System.
  - NOTE: Check Emergency Plan Activation, EI 1300.01 to ensure the proper emergency classification and the actions accordingly.
- 5.4.2 Determine if it is necessary to evacuate other areas of the station in accordance with AD 1827.11, "Assembly, Accountability & Subsequent Evacuation."
- 5.4.3 Ensure that no one re-enters Containment until it has been determined safe by Chemistry & Health Physics personnel.
- 5.4.4 Coordinate and monitor station recovery activity in accordance with the Emergency Implementing Procedures, EI 1300 series, and applicable operating procedures and assure that conditions are restored to normal in Containment.
- 5.5 Action of Radiation Monitoring Team
  - 5.5.1 Report to the Health Physics Monitoring Room for instructions.
  - 5.5.2 Survey area immediately adjacent to the Containment personnel lock and other areas which were used for evacuation as determined by the EDO and/or C&HP.
  - 5.5.3 Check evacuated personnel for contamination in accordance with HP 1602.01, "External Personnel Radiation Exposure Monitoring," and decontaminate, as necessary, in accordance with HP 1604.01, "Personnel Decontamination".
  - 5.5.4 Report results of surveys and personnel monitoring to the C&HP or EDO and the control room for evaluation.

#### 5.5 Action of Radiation Monitoring Team

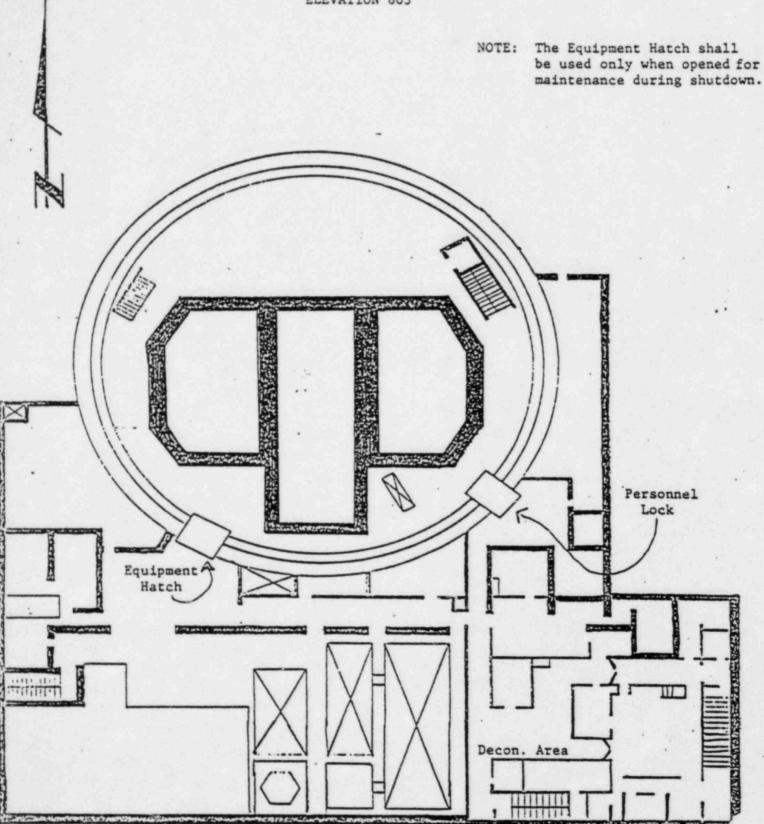
5.5.1 Report to the Health Physics Monitoring Room for instructions.

- 5.5.2 Survey area immediately adjacent to the Containment personnel lock and other areas which were used for evacuation as determined by the EDO and/or C&HP.
- 5.5.3 Check evacuated personnel for contamination in accordance with HP 1602.01, "External Personnel Radiation Exposure Monitoring," and decontaminate, as necessary, in accordance with HP 1604.01, "Personnel Decontamination".
- 5.5.4 Report results of surveys and personnel monitoring to the C&HP or EDO and the control room for evaluation.

AD 1827.13.5

### CONTAINMENT AND AUXILLARY BUILDING

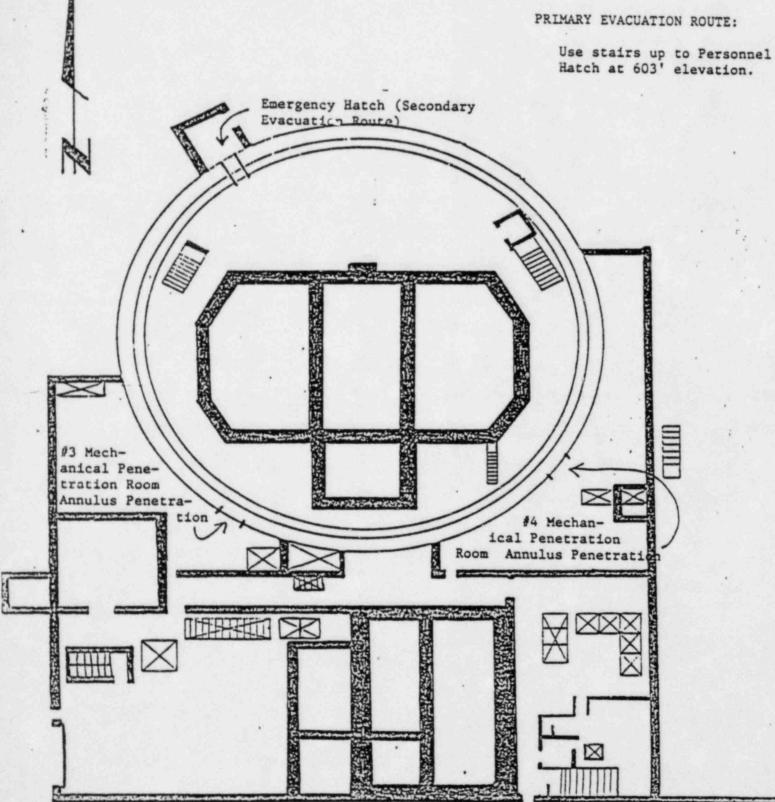
#### ELEVATION 603'



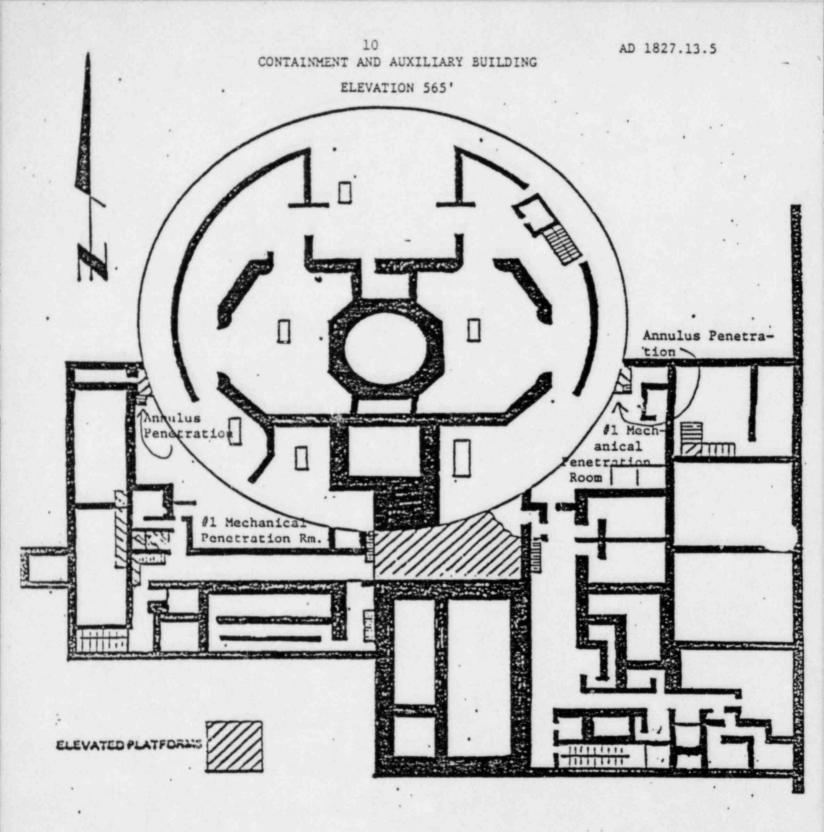
ENCLOSURE 1

CONTAINMENT AND AUXILIARY BUILDING

#### ELEVATION 585'



ENCLOSURE 2



ENCLOSURE 3

AD 1827.16

Davis-Besse Muclear Power Station

Unit No. 1

Administrative Procedure AD 1827.16

Search and Rescue

# NUCLEAR SAFETY RELATED

Record of Approval and Changes

Prepared by J. G. Roberts	6/15/77
submitted by TD Muner	Date 5/28/17
Recommended by	6/28/17
QA ApprovedManager_of Quality Assurance	Date
Approved by	
	Jace

Revision No.	SRB Recommendatio	n Date	QA Approved	Date	Sta. Supt. Approved	Date
1	Recommendatio	1/21/59	E2D-414	1/29/81	TP3 may / B.03	1/2=/81
2	Anong	4/12/83	C.T. Daft/fil	4/20/8-	E winced	4/2,/87

1. PURPOSE

This procedure will be utilized by station personnel when the actual location of any person at the Davis-Besse Nuclear Power Station cannot be determined and the possibility of this person being trapped or injured exists. Directions in this procedure address the search process that will be used to locate missing personnel, as well as the actions to be taken to rescue a trapped or injured person from a previously evacuated area.

1

- 2. REFERENCES
  - 2.1 10 CFR 50, Appendix E. "Emergency Plans for Production and Utilization Facilities"
  - 2.2 "NUREG-0654 FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants"
  - 2.3 Davis-Besse Nuclear Power Station Emergency Plan
  - 2.4 AD 1827.02, "Medical Treatment of Injuries"
  - 2.5 AD 1827.05, "Explosion"
  - 2.6 AD 1827.06, "Tornado"
  - 2.7 AD 1827.07, "Earthquake"
  - 2.8 AD 1827.08, "Flooding"
  - 2.9 AD 1827.11, "Assembly, Accountability & Subsequent Evacuation"
    - 2.10 AD 1827.12, "Protective Action Guidalines"

2.11 AD 1827.13, "Containment Evacuation"

2.12 EP 1202.12, "High Radiation"

2.13 EP 1202.35, "Fire Emergency"

2.14 AB 1203.13, "High Airborne Activity"

2.15 EP 1202.40, "Radioactive Spills"

2.16 EP 1202.46, "Toxic Gas and Liquid Release"

3. NOTIFICATION

As soon as it is recognized that a person is missing and may be

2

disabled, the Control Room should be notified and given as much information as possible:

2

- 3.1 Name and badge number of missing person.
- 3.2 Location, if known. If not known, give last know location and possible present location(s).
- 3.3 Complicating circumstances, if any, (e.g., explosion).
- 4. SEARCH

1

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1

The Shift Supervisor or his designee shall attempt to locate the missing person. Any or all of the following methods may be used:

- 4.1 Page the missing person over the Station gai-tronics at least 3 times.
- 4.2 Check the key distribution cabinet logs.
- 4.3 Question the person's supervisor and workmates as to where the person was last seen. Initiate a search in these areas. If complicating circumstances exist (e.g., explosion or toxic gas), then initiate the search as a rescue attempt following the steps given in sections 5, 6, and 7 of this procedure.
- 4.4 Check the Radiation Exposure Permits.
- 4.5 Check the stores equipment or tool signout logs.
- 4.6 Check the Gatehouse Log and Security computer printout.
- 4.7 Check at the Construction Office Building.
- 4.8 Phone the person's home to see that they didn't leave the station without signing out or leaving their badge with the gate guard.
- 5. RESCUE

The following actions shall be taken in order to rescue a disabled person.

- 5.1 Shift Supervisor
  - 5.1.1 Sound the statica "Initiate Emergency Procedures" alarm, unless already actuated.
  - 5.1.2 Announce "Attention, First Aid Team report to (location of area)," twice over the public

address system. If the location is not known, the First Aid Team will report to the control room.

- NOTE: If the emergency occurs during normal working hours, the unassigned First Aid Team Members shall assemble at the Operations Support Center. On the backshift, weekends and holidays, the First Air Team will be composed of personnel assigned by the Shift Supervisor.
- 5.1.3 Initiate other emergency procedures if needed to minimize the hazard affecting the trapped or injured person.
- 5.1.4 Contact the Operation Support Center Manager or others for support as needed.
- 5.2 First Aid Team Leader

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- 5.2.1 Proceed to the designated area immediately.
- 5.2.2 Organize and direct the search and rescue operations. The following assignments should be given by the First Aid Team Leader.
  - Dispatch personnel to procure the following equipment as needed: First Aid bag, two Scott Air Pacs, axe, fire extinguisher, stretcher, life lines, B -high range survey meter, portable air sampler, aluminized fire suits and any other equipment that may be useful.
  - 2. Procure two volunteers familiar with that area to enter the affected space for an initial assessment of the situation. If the area is known to be contaminated or an explosion or steam release is involved in the accident, protective clothing commensurate with the expected hazard shall be worn including a Scott Air Pac.

If the area is smoke- or steam-filled, or if the area is in disarray because of fire or explosion the men will use life lines or buddy system.

Radiation levels should be monitored as the area is entered.

#### AD 1827.16.1

If the rescue is complicated by another hazard, the First Aid Team will retire to a safe area and plan a method of rescue.

5.2.3 Assign one person to establish phone communications with the Control Room to keep them informed of the situation.

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5.2.4 Ensure that the actions specified in Section 6 are completed.

#### 6. COMPLICATING CONDITIONS

- 6.1 High Radiation and/or High Airborne Activity
  - 6.1.1 Changes from normal radiation protection procedures.

If an individual is trapped or disabled in an area in which the dose received during the rescue operations may result in increasing the health hazard to the person, the rescue must be carried out as expeditiously as possible.

Therefore, the following modificatons are allowable to the Station's radiation protection procedure:

- No prior authorization for exposure need be made out, only verbal authorization from the senior TECo management individual present is required.
- Exposure in excess of 10 CFR 20 limits may be taken, keeping in mind the biological effects of large doses of radiation.
- 3. A dose of up to 100 rem may be received once in a lifetime to save a life. If time permits adequate planning and protection, this dose should be limited to 12 rem.
- 6.1.2 Action to be Taken:
  - 1. Complete all items in Section 5.
  - Wearing a 0-200R self-reading dosimeter and using a high range survey instrument, enter the rescue area and attempt to complete the rescue.

6.2 Fire

6.2.1 Rescue of a victim shall take precedence over fire-fighting unless necessary to suppress the fire to accomplish rescue.

- 6.2.2 Action to be Taken:
  - 1. Complete all items in Section 5.
  - 2. Obtain aluminized clothing from fire cabinet.
  - One operator should spray water ahead of the other two while they perform the rescue, if required.
- 6.3 Steam or Hot Water
  - 6.3.1 Rescue of a victim shall take precedence over isolation of a system unless:
    - It is necessary to isolate the system to perform the rescue.
    - The action of not isolating the system will place the lives of other personnel in immediate danger.
  - 6.3.2 Action to be Taken:
    - 1. Complete all items in Section 5.
    - 2. Obtain aluminized clothing from fire cabinet.
    - One operator should spray water ahead of the other two while they perform the rescue, if required.
- 6.4 Wreckage
  - 6.4.1 Action to be Taken:
    - Obtain tools necessary to perform rescue from the maintenance shop.
    - 2. Enter the area to perform rescue.
      - NOTE: Exercise caution to ensure that further collapse of building/structures will not occur upon entry.
- 6.5 Toxic Gas

6.5.1 Action to be Taken:

1. Obtain a Scott Air Pak.

2. Enter area and perform rescue.

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#### 7. AFTER RESCUE

- 7.1 Remove the victim to the closest safe area and administer any required first aid.
- 7.2 If the victim is injured and contaminated, he should be treated in accordance with AD 1827.02, "Medical Treatment of Injuries."
- 7.3 If not already accomplished, inform security and the Shift Supervisor that the missing person has been found and is being treated.

Davis-Basse Nuclear Power Station

Unit No 1 ADMINISTRATIVE PROCEDURES AD 1827.17 Emergency Call System

### NUCLEAR SAFETY RELATED

#### Record of Approval and Changes 8/29/80 G. J. Reed Prepared by\_ Date 9/3/80 Judith Hirsch Submitted by Date Section Head 130 Beur Recommended by\_ Date SRR Chairman N/A QA Approved \_ Date Manager of Quality Assurance 0/1 monuna Approved by\_ Date Station Superintendent

Revision No.	SRB Recommendation	Date 1/14/51	QA Sta. Supt. Approved Date Approved Date C JLaff/egg 1/29/51 TL'marey 1/2005 1/201/51
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4	manny	2/22/03	C.T. Daft/ the 3/1/83 Tromung 3/19/53

#### 1. PURPOSE

To provide guidelines for the activation and implementation of the Station Emergency Call System in order to achieve invediate notificatiop and response of Key personnel of the Nuclear dission in order to relieve or miligate an abnormal plant situation.

#### 2. APPLICABILITY

To be sed whenever the Emergency Plan is activated, a system test is performed, or the Shift Supervisor deems it necessary to contact additional personnel to respond to a plant event.

#### 3. REFERENCES

- 3.1 Davis-Besse Nuclear Power Station Emergency Plan
- 3.2 Emergency Implementing Procedure, EI 1300 series
- 3.3 Administrative Memorandum No. 37
- 3.4 Communication System Test, PT 5108.01
- 3.5 Radio Communications System, SP 1705.19

#### 4. PRECAUTIONS AND LIMITATIONS

The primary function of the system is for emergency notifications and should be tested monthly in accordance with PT 5108.01 Communication System Test.

#### 5. PREREQUI: ITES

- 5.1 Normal lineup of the Radio Control Console and its associated encoder (located in Control Room only)
  - 5.1.1 Radio Control Console
    - a. Off-On Switch ON
    - b. Volume At a comfortable level
    - c. Portables/TECo/Law Button OUT
    - d. Single Tone OFF Button depressed
    - e. Page/Superintendent Button OUT
    - f. Ottawa County Sheriff Button OUT

- g. Intercom Button OUT
- h. Alert Tone Button OUT
- 5.1.2 Encoder (Modern 36 model)

Ensure that the encoder is ON as indicated by two numbers being visible in the visual display window.

- 5.2 Normal lineup of the Telephone Pager (located in the Shift Supervisor's office)
  - 5.2.1 A cassette tape must be installed in the cassette carriage located on the top of the machine.
  - 5.2.2 An announcement cartridge must be installed in the slot located on the front left hand side of the machine.
    - NOTE: Announcement Cartridges come in different lengths; 30, 60 and 120 seconds. Messages should be kept as brief as possible and a 30 second tape should be normally installed; however, if a longer message is required, the 60 or 120 second tape can be installed.
  - 5.2.3 The CPC (Calling Party Control) switch located on the back side of the machine must be in the "on" position.
  - 5.2.4 The Cont./Fixed switch located on the left hand side of the machine should be in the "Cont." (Continuous) position.
  - 5.2.5 The "Power" switch located on the front left hand side of the machine should be depressed and its associated power lamp lit indicating the machine is on.
    - NOTE: When the machine is being used, the "In Use" lamp located just above the power lamp will be lit.
  - 5.2.6 The orange "Automatic Answer" button located on the front right hand side of the machine should be depressed.
  - 5.2.7 The associated microphone should be plugged into the T1 jack located on the left hand side of the machine.
- 5.3 Normal lineup of the "beeper" pagers (held by the Key Emergency Response Personnel)

- 5.3.1 A charged nickle-cadmium battery should be installed in the pager.
- 5.3.2 The off-on-volume switch (labeled Vol.) should be rotated off the "red dot" position to a comfortable volume level.
  - NOTE: When the pager is initially turned on, it will beep and hiss indicating the pager is operational. Push down on the pushbutton located just below the speaker jack (labeled Spkr) to stop the hiss. The pager is now in a standby mode for receiving any pages that may be made. Do <u>NOT</u> rotate the volume switch completely around to the black dot.

#### 6. GENERAL

- 6.1 This system basically consists of a beeper "paging segment" and a telephone message "recorder segment".
  - 6.1.1 Paging Segment

The paging segment of the Emergency Call System should reach 11 key management positions who, upon evaluating the plant conditions, shall notify only those additional personnel under their cognizance that they feel are needed to respond. If all or a major portion of additional TECo personnel are required, they shall be notified in a "call tree" type method using the staiton organization chart significantly cutting the time required to phone a large number of individuals by only one or two personnel.

6.1.2 Recorder Segment

The telephone message recorder segment of the Emergency Call System should eliminate the numerous and time consuming telephone calls that would be received by the Control Room during abnormal plant conditions. This will enable the Operators to devote more of their time to controlling the plant.

6.2 The paging segement and recorder segment of the Emergency Call System work together in providing a notification system that minimizes the response time of needed off-site personnel. A basic sequence of events is as follows:

1. A plant event occurs.

 The Station Superintendent or his designated alternate can be paged from the Radio Control Console located in the Control Room.

1.

- The Station Superintendent or his alternate calls the Shift Supervisor at 259-5664.
- A message is recorded by either the Station Superintendent or the Shift Supervisor on the Telephone Pager.
- 5. The other Key Emergency Response Personnel are group paged from the Radio Control Console located in the Control Room.
- These personnel call the Edison Switchboard Operator who conferences them to the recorded message.
- Based on the information in the message, the Key Emergency Response Personnel notify those additional personnel required to mitigate the event as specified in Figure 3 of EI 1300.00 Station Response to Emergencies.

#### 7. PROCEDURE

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- 7.1 To page the Station Superintendent, the Radio Encoder must be used in conjunction with the Radio Control Console as follows:
  - 7.1.1 Depress the Portables (Teco/Law) pushbutton. Wait five seconds for repeaters to function, then
  - 7.1.2 Depress the EAST Single Tone Generator pushbutton for the Lindsey repeater area (call sign KTO 649).
  - 7.1.3 Depress the mike monitor key to insure the channel is clear and then release the key.
  - 7.1.4 To page the Station Superintendent: depress the number 12 on the Radio Encoder so that it appears on the visual display.
    - NOTE: A "steady" tone will indicate a group page for personnel carrying the beeper pagers. A "beep-beep-beep" tone would indicate an individual page.
  - 7.1.5 Depress the page button (labeled P) on the Radio Encoder and be sure that the page indicating light comes on.
  - 7.1.6 Depress the talk button (labeled T) on the Radio Encoder and state into the microphone "This is an

activation of the Davis-Besse Emergency Call System. Please contact the Control Room."

- 7.1.7 After releasing the talk button, depress the TOL Single Tone Generator pushbutton for the Toledo repeater area (call sign KTI 854).
- 7.1.8 Then repeat steps 7.1.3 through 7.1.6.
- 7.1.9 When done, return console to a normal lineup as described in Section 5.1.1.
  - NOTE: Detailed operation of the Radio Control Console is given in SP 1105.19, Radio Communications System.
- 7.2 A message can then be recorded on the Telephone Pager either locally or remotely.
  - 7.2.1 Locally, the message should be recorded by the Shift Supervisor or his designee as follows:
    - a. Depress the STOP button located on the front right hand side of the machine.
    - b. Depress the PRESS TO RECORD button on its associated microphone and dictate the desired message. Do <u>NOT</u> release the PRESS TO RECORD button until the cartridge tape stops rotating.
    - c. Depress the AUTOMATIC ANSWER button to set the machine up for message retrieval.
  - 7.2.2 Remotely, the message should be recorded by the Station Superintendent or his designated alternate as follows:

- a. Call the Edison Centrex Operator at "O" if inside the company, or 259-5000 if outside the Company. Then ask the Operator, after giving your name and last four digits of your social security number, to access the Emergency Call System Dictaphone answering machine.
- b. When the line starts ringing, apply the Dictacall tone until the machine answers.
- c. Immediately press the "#" button on the telephone or the Touch Tone Pad (if at a rotary dial phone) and dictate the desired message.

- d. To check the announcement, stay on the line and the machine will play it back. Otherwise just hang up the phone.
  - NOTE: Only the Station Superintendent or his designee will have the Dictacall Tone Generator and the Touch Tone Pad for remote message recording.
- 7.3 To page the otner Key Emergency Response Personnel, the Radio Encoder must be used in conjunction with the Radio Control Console as follows:
  - 7.3.1 Depress the Portables (TECo/Law) pushbutton. Wait five seconds for repeaters to function, then
  - 7.3.2 Depress the EAST Single Tone Generator pushbutton for the Lindsey repeater area (call sign KTO 649).
  - 7.3.3 Depress the mike monitor key to insure the channel is clear and then release the key.
  - 7.3.4 Depress the number 4 twice on the Radio Encoder such that 44 appears on its visual display.
  - 7.3.5 Depress the page button (labeled P) on the Radio Encoder and note that the page indicating light comes on.
  - 7.3.6 After the page indicating light goes out, depress the talk button (labeled T) and state into the microphone, "This is an activation of the Davis-Besse Emergency Call System. Please contact the Edison Operator."
  - 7.3.7 After releasing the talk button, depress the number 5 twice such that 55 appears on the visual display.
  - 7.3.8 Again depress the page button (labeled P) on the Radio Encoder and note that the page indicating light comes on.
  - 7.3.9 After the page indicating light goes out, depress the talk button (labeled T) and state into the microphone, "This is an activation of the Davis-Besse Emergency Call System. Please contact the Edison Operator."
  - 7.3.10 After releasing the talk button, depress the TOL Single Tone Generator Button for the Toledo repeater area (call sign KTI 854) on the Radio Control Console and repeat steps 7.3.3 through 7.3.9, then go to step 7.3.11.

- 7.3.11 After releasing the talk button, return the Radio Control Console to a normal lineup as described in section 5.1.1.
  - NOTE: This is the group page method and personnel carrying the beeper pagers will receive a "steady" tone indicating it is an emergency page from Davis-Besse. Individual pages can also be made to each of the Key Emergency Response Personnel by following instructions given in Administrative Memorandum No. 37. This paging method is for non-emergency notifications and the person that is carrying the beeper pager will receive a "beep-beep" tone indicating this.
- 7.4 The Key Emergency Response Personnel can then receive the message from the Telephone Pager as follows:
  - 7.4.1 Call the Edison Centrex Operator at "O" if inside the company or 259-5000 if outside.
  - 7.4.2 The Edison Operator will then check the individual's identification (name and last four digits of their social security number) and access them to the Telephone Pager.
    - NOTE: The Edison Centrex Operator along with the Emergency Planning Supervisor or designated alternate is responsible for ensuring accountability of the Key Emergency Response Personnel. The Emergency Planning Supervisor or alternate should call the Edison Operator to ensure all Key Emergency Personnel have responded to the page. If a Key Emergency Response Person does not respond to the page (by calling the Edison Operator), the Emergency Planning Supervisor is responsible for performing the notification requirements for that individual.

If the Emergency Planning Supervisor does not respond to the page, then the Edison Operator shall attempt to make contact by telephone, both at the office and at home. Failing to do so, the Edison Operator would then contact the Nuclear Services Director and inform him of the situation and await further instructions as required. 7.5 Once the Key Emergency Response Personnel have heard the recorded message from the Telephone Pager, they shall perform, according to instructions within the recorded message, one of the following:

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- 7.5.1 Take no action but remain in a standby status.
- 7.5.2 Proceed to the Station as soon as possible.
- 7.5.3 Contact their secondaries and then return to the station.
  - Designated secondaries will remain in a standby status, or
  - b) Contact additional personnel to respond.
    - NOTE: Key personnel and secondaries will contact additional personnel as necessary. A list of names and telephone numbers of personnel that may be required to be called is found in Administrative Memorandum No. 37.

#### 8. ABNORMAL OPERATION

- 8.1 If either the telephone message recorder (Telephone Pager) or the Radio Control Console and Encoder become inoperable, then the Shift Supervisor shall assign an individual to contact and relay the message that would have been placed on the recorder to the Emergency Duty Officer and the Emergency Planning Supervisor or alternate by using the individual page (if available) or by telephoning their office or home.
- 8.2 The Emergency Planning Supervisor is then responsible for contacting the rest of the Key Emergency Response Personnel with the message.

#### 9. MAINTENANCE

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- 9.1 The Radio Control Console and associated Encoder are made by Motorola. If they become inoperable, a phone call should be made directly to Motorola Service (531-2844 or 475-5710)) to get a service representative out as soon as possible. The plant maintenance group will coordinate site activity by the vendor representative, as may be necessary.
- 9.2 The "beeper" pagers are of the Pageboy II model type made by Motorola. If any pager becomes inoperable, the individual holding the pager should contact the Emergency Planning Supervisor who shall notify the local Motorola service representative and if required, issue a replacement pager until the affected pager is repaired.

9.3 The "beeper" pager battery charging units are made by Motorola and should also be serviced by them if there is a problem. The nickel-cadmium pager batteries should be charged eight (8) hours every day. This can be accomplished as follows:

- 9.3.1 Charge one battery while the other is used to allow the pager to be carried on the individual.
- 9.3.2 Insert the entire pager into the charger while it remains on to receive incoming pages. It will charge the battery at the same time.
- 9.3.3 When charging a battery or entire pager, an indicating light will come on to show that the charger is operating (one is provided for each method).
  - NOTE: If a page is received while the unit is plugged in, reset the pager after receiving the message since the pager will discharge the battery if not reset.
- 9.3.4 During emergencies, the batteries can be used up to 36 hours without being charged, but must then be recharged for at least 12 hours prior to being placed back into service.
- 9.4 The telephone message recorder is a Telephone Pager model made by the Dictaphone Corporation. Should it become inoperable, servicing should be performed by Dictaphone (885-3393). The plant maintenance group will coordinate site activity by the vendor representative, as may be necessary.

10 AD 1827.17.4

#### ECS MESSAGE FORMAT

This is an activation of the Davis-Besse Nuclear Power Station Emergency Call System. A(n)

Classification

has been declared at Davis-Besse due to:

Classification Category or Explanation

The response required for this event is as follows:

(Response Required) (Response Required)

4 | The plant is presently \_

(Brief description of present plant conditions)

Attachment 1

END

AD 1350.04

9

Davis-Besse Nuclear Power Station

#### Unit No. 1

Administrative Procedure AD 1850.04

Post Accident Radiological Sampling and Counting

## NUCLEAR SAFETY RELATED

¥.

#### Record of Approval and Changes

Preparad by Da	ve Briden	12/19/79
		Date
Submitted by	D. W. Briden	1/17/80
	Section Head	Date
Recommended by_	BRB 24.4 SR3 Chairman	1/22/30 Date
	SR3 Chairman	Date
QA Approved	Deminto	2/9/20
	Manager of Quality Assurance	Date
Approved by	20 annal	2/12/20
	Station SuperinterGent	Data
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Revision	SRB		QA	Sta. Supt.	
No.	Recommendation	Date	Approved Dace	Approved	Date
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#### 1. PURPOSE

The purpose of this procedure is to address short-term preparedness in responding to radiological sampling and counting for a potential accident which would make normal sampling and counting impractical.

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- 2. SCOPE
  - 2.1 Gamma Spectral counting capability
    - 2.1.1 In the event of such an accident, the existing counting room could not be used.
    - 2.1.2 A temporary counting room would be set up in the Water Plant lab or other suitable location for gross counting, and gamma spectroscopy.
  - 2.2 Reactor Coolant System (RCS) sampling
    - 2.2.1 Depending on Radiation exposure, the normal sampling system can be used.
    - 2.2.2 A shielded high pressure sampling sampler can be used for pressurizer samples when the normal sampling system cannot be used.
  - 2.3 Containment atmosphere sampling
    - 2.3.1 The normal sampling assemblies on Containment Monitors RE 4397AA and BA are in area where the expected radiation levels would be too high to enter.
    - 2.3.2 A high pressure sampling assembly will be used for sampling at the Containment Hydrogen Analyzers.
  - 2.4 Station vent sampling
    - 2.4.1 Silver zeolite filters should be used for iodine sampling.
    - 2.4.2 If RE 2024C or RE 2025C indications are off scale, direct radiation dose rates from a Noble Gase Tube are converted to uCi/cc.
- 3. REFERENCES

- 3.1 NUREG-0578, July, 1979, TMI-2 Lesson Learned Task Force Status Report and Short-Term Recommendations
- 3.2 NUREG-0585, October, 1979, TMI-2 Lesson Learned Task Force Final Report

3.3 NRC September 13, 1979 Letter (Followup Actions Resulting from the NRC Staff Reviews Regarding the TMI-2 Accident)

2

- 3.4 TED September 23, 1979 Letter (TED Response to NRC September 13, 1979 Letter for DBNPS)
- 3.5 NRC October 30, 1979 Letter (Discussion of Lessons Learned Short-Term Requirements)
- 3.6 TED November 21, 1979, Letter (TED Response to NRC October 30, 1979 Letter for DBNPS)

#### 4. PRECAUTIONS

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- 4.1 Individuals collecting samples shall not receive in excess of 3 and 18 3/4 rems to the whole body or extremities, respectively.
- 4.2 The requirements for exceeding 1.25 rem to the whole body during a quarter should be followed as defined in Section 6.10 of HP 1601.01 (Guides and Limits for Exposures to Radiation)
- 4.3 No entries shall be made into areas exceeding 100 mR/hr without a high range survey instrument, and an individual qualified to evaluate radiological conditions. Unless airborne activities are known, respiratory equipment is to be worn.
- 4.4 Since Chemistry and Health Physics personnel will collect the samples, new REP's are not required.
- 4.5 WARNING WHEN COLLECTING SAMPLES

Potential radiation levels during accident conditions are:

- 4.5.1 Containment Atmosphere Sampling
  - 585' elevation in front of the high pressure sampler may be 0.1 - 5 R/hr.
  - Hallway on 585' elevation adjacent to sampling may be 5 - 50 R/hr.
- 4.5.2 Station Vent Sampling
  - Inside the Non-Radwaste Ventilation Room by sampling system may be 5 R/hr.
  - At RE 2024 and RE 2025, the radiation could be 100 - 1000 R/hr if EVS system is operating.

- 4.5.3 RCS Sampling
  - 1. Sample system could be 0.1 5 R/hr.
  - 2. Hallway to sample system could be 15 100 mR/hr.
  - Pathway to the RCS sampling system is to take the elevator or stairs in the southeast corner of the Auxiliary Building to the 545 ft. elevation.

#### 5. PROCEDURE

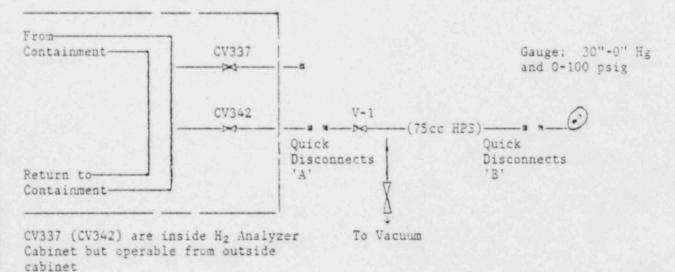
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5.1 Containment Atmosphere Sampling

The normal sample points for Containment atmosphere at RE 4597AA and BA cannot be used because the radiation levels in the Mechanical Penetration Room will be excessive. When a high pressure sample is collected, only radioactive noble gases and iodines are determined. Particulates are not applicable based on Lessons Learned Item 2.1.6.b.

- 5.1.1 The sampler is evacuated by connecting a vacuum pump V-2 with V-2. With gauge attached, V-1 closed, and V-2 open, evacuate the sample assembly. Close V-2 and remove from vacuum pump.
- 5.1.2 Connect 75cc high pressure sampler (HPS) to quick disconnect 'A' from CV 337 (CV 342) located above Hydrogen Analyzer Cabinet on 585' elevation, as in Figure 1 shown below:



#### Figure 1

5.1.3 Verify flow through the hydrogen analyzer. (This system is isolated during an SFAS trip and Operations would have to open isolated valves to reestablish flow.)

AD 1850.04.5

5.1.4 Open valve v-1 on the sampler.

5.1.5 Slowly open valve CV 337 (CV 342). After the pressure indication has stabilized as indicated on the pressure gauge, close CV 337 (CV 342) and V-1. Disconnect HPS assembly from CV 337 (CV 342) at disconnect 'A'.

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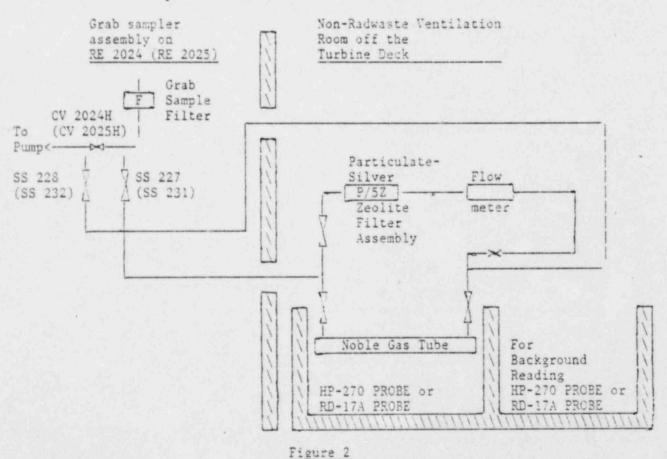
5.1.6 Remove gauge at quick disconnects 'B' and count 75 cc HPS assembly for gamma emitting radionuclides.

#### 5.2 Station Vent Sampling

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The station vent is continuously monitored by RE 2024 and RE 2025, however, they do not meet the range required by January 1, 1981, from Items 2.1.8.b of NUREG 0578. During a post accident condition, noble gas readings can be obtained every 15 minutes by the use of a portable high range survey instrument next to the sampling line. Interference from noble gases for measuring radioiodine can be reduced by using silver zeolite filters.

5.2.1 If RE 2024C and RE 2025C readings are off scale, the emergency station vent sampling assembly located in the non-radwaste ventilation room on Elev. 623' is put into service.



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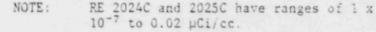
NOTE: The RD-17A Probe is positioned 12-inches from the Noble Gas Tube, and the HP-270 Probe is in contact with the Noble Gas Tube.

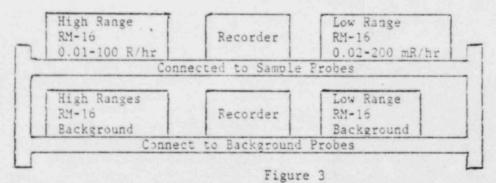
- Set up the interim station vent monitoring assembly as shown in Figure 2. (Either RE 2024 or RE 2025 may be used for connecting up to the normal grab sampling valves.)
- Remove the particulate and charcoal filters in RE 2024 (RE 2025) grab sampler, and reconnect.
- 3. Close valve CV-2024H (CV-2025H)

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- Connect the tygon tubing labeled "Inlet" to valve SS-227 (SS-231).
- Connect the tygon tubing labeled "OUTLET" to valve SS-228 (SS-232).
- 6. Open valves SS-227 (SS-231) and SS-228 (SS-232).
- Noble gases are monitored by a HP-270 Probe for Xe-133 concentrations between 0.054 to 540 µCi/cc, and a RD-17A Probe for Xe-133 concentrations between 520 to 5.2 x 10° µCi/cc. Readouts are shown in Figure 3.





- Determine the net close rate for the appropriate monitors used to monitor the Noble Gas Tube using Attachment 1.
- Calculate the Xe-133 concentrations using Attachment 1.

- 10. If RE 2024C or 2025C reading are of scale, then readings from emergency high range or low range probes are to be given to the Shift Supervisor or Emergency Duty Officer every 15 minutes.
- 5.2.2 Iodine analyses can be collected at the interim Station Vent Samples.

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- Silver zeolite cartridges are used for iodine sampling with a particulate filter infront of the cartridge.
- Calculate the volume of air that passed through the particulate-silver zeolite filter assembly by multiplying the sample flow rate times the collection period.
- Iodine analyses and calculations can be performed by:
  - Normal computerized gamma spectroscopy counting.
  - Emergency on site counting described in Section 5.4.
  - (3) SAM-2 operation described in AD 1850.05.
- 5.3 Reactor Coolant Liquid Sampling

During post accident conditions the letdown system would be isolated to prevent excessive radiation levels in the Auxiliary Building resulting from high levels of radioactivity in the reactor coolant liquid. In the interim, until the permanent RCS sampling system is available, a pressurizer sample will be collected at the normal sample point, provided the radiation levels within the room can be controlled with shielding.

5.3.1 Interim RCS Sampling

The RC System Accident Sampling System shown in Attachment 2 is designed to obtain a reactor coolant sample from the pressurizer vapor or water space following an accident, which renders the normal sample room inaccessible, while maintaining the radiation exposure to personnel as low as practicable.

The system consists of tubing and valves to obtain the sample and return it to the Quench Tank, a sample panel with a cooler for conditioning the sample, solenoid valves for recirculation, sampling, and flushing and a shielded sample cylinder which collects the sample. The sample panel and its associated control station are designed for storage until required. The demineralized water, for cooling the sample, and the sample tubing are permanently installed at the same location.

- Open demineralized water valve to the emergency sample cooler located at approximately head level at the entrance to the room where the cooler is installed.
- Using quick disconnects, attach the shielded sample container to the sample panel.
- Open the manual inlet and isolation valves SV-10 and SV-11 on the shielded sample container.
- Open manual sample inlet and outlet isolation valves SV-8 and SV-9. (These are located on the wall above the sample panel).
- Ensure RC 111 and SV-24 on interim RCS sampling return to quench tank are open. Valves are shown on M-040-A at location F-5. These valves are physically located in Mechanical Penetration Room No. 2 approximately 10 feet along Containment wall from area at door.
- 6. From the Control Room, open control values RC 239B (pressurizer water sample), RC 240A, and RC 240B. (This pressurizes the sample system up to solenoid values SV-3 and SV-4.)
- 7. At the remote control panel, place switch SW-1 (sample low) to "ON". (This opens cooling water valve SV-2, the low sample valve SV-3, and sample cylinder inlet and outlet valves SV-5 and SV-6.)
- 8. Allow the system to circulate for 30 minutes.
  - NOTE: Recirculation can also be accomplished with the high sample switch SW-2 which is provided to sampling at low system pressure. SW-2 opens SV-2, SV-4, SV-5 and SV-6.
- To collect the sample in the cylinder, place SW-1 (SW-2) in the "OFF" position to trap the liquid.

5

 From the Control Room, close valves HV-240A and HV-240B to isolate the sample system from the pressurizer.

8

- At the remote station, place SW-3 (flush) in the "ON" position. (This opens valves SV-1, demineralized water flush; SV-4, high sample; and SV-7, sample cylinder bypass.)
- Flush until radiation levels are reduced to the lowest level.
- Close inlet and outlet manual isolations valves SV-10 and SV-11 on the sample cylinder and disconnect the quick disconnects.
- After disconnecting the sample cylinder, switch SW-3 (flush) should be placed to "OFF".

#### 5.4 Onsite Counting Facility

4

In order to meet the 3-hour post-accident radiological sampling and analysis requirement for RCS and containment atmosphere samples, an operational, adequately equipped, onsite counting facility must be available.

The location chosen for the Onsite Counting Facility must be set up where the radiation level is low, such as the entrance lobby on the east size of the Office Building (585 ft. elevation)or in the Water Plant Lab.

# 5.4.1 Equipment

A Canberra Model 8100 or 8130 multichannel pulse height analyzer (MCA), presently onsite, has been assigned for use in the Onsite Counting Facility in the event of an accident. Should utilization of the Facility be required, a Ge(Li) detector assembly will be removed from the Counting Room (603 ft. elevation) and relocated in a low radiation area where it will be connected with the Canberra MCA and other necessary equipment to provide the required gamma spectral analysis capability.

Efficiency charts and/or data tables are available in the counting room manual to provide necessary counting information for each of the following samples:

- 1. Reactor coolant
- 2. Containment atmosphere (noble gases)

3. Stack exhaust (noble gases)

9

- 4. Stack particulates filter
- 5. Stack iddine cartridge.
- 5.4.2 Procedure

4

Upon declaration of an emergency requiring activation of the Onsite Counting Facility, the following procedure will be followed:

- If the Counting Room cannot be used transport Canberra Model 8100 or 8130 to a suitable location, i.e., the Station Lobby, Water Plant Lab, or Radiological Testing Lab at the DBAB.
- In Counting Room, gradually reduce high voltage to the Ge(Li) detector until high voltage is off. Turn off power to the NIM bin in which the high voltage supply and amplifier are located.
- Disconnect cables at the Ge(Li) detector, amplifier, and MCA.
- Remove Ge(Li) detector from shield and immediately place in a dewar of LN<sub>2</sub>. Relocate in a low radiation area with NIM bin containing high voltage and amplifier. Bring a sample shelf assembly along.
- Reconnect high voltage, pre-amp power, and signal cables between the NIM bin components and the Ge(Li) detector per Attachment 3.
- Turn on NIM bin power and gradually bring high voltage up to normal operating voltage (3000 volts). Allow about 15 minutes for the system to stabilize.
- 7. To achieve 0.5 kev/channel energy calibration, adjust the amplifier fine gain until the number of channels between two reference peaks is two times the difference between the peaks in kev. Then adjust the baseline until a reference peak is in the channel equal to two times the energy in kev. It is not necessary to have exactly 0.5 kev/channel.
- Betermine background spectrum before counting samples. Good operating practice would recommend the stationing of an operating thin-window G-M

survey meter with audible output at the Onsite Counting Facility. This would alert personnel to high atmospheric noble gas activity which could disrupt counting.

- After counting appropriate samples, the data reduction necessary to determine the activity for each principal gamma emitter will be performed per RC 4502.00, Gamma Spectral Analysis.
- Specific information for counting the RCS sampling system (i.e., the 40-cc bomb inside 3-inches of lead shielding).
  - (1) Remove the collimator pin from the shielding.
  - (2) Use Attachment 4 for radionuclide data.
  - (3) Use Attachment 5 for efficiencies. These efficiencies in Attachment 5 are for counting at 1 1/4 inches between the container (at the collimator) and the detector edge with th collimator centered on the center of the delector. To get efficiencies for one foot divide the 1 1/4 inch efficiencies by 116. To get three foot efficiencies, divide the 1 1/4 inch efficiencies by 1208.
  - (4) Use Attachment 6 for instructions to perform calculations manually if the computer is not available.
  - (5) If the RCS sampling system is needed to collect another sample, the sample which has been counted will be flushed out of the bomb when the next sample is to be recirculated.

11 AD 1850.04.2

# Data Sheet for Calculating the Xe-133 Concentration in the Station Vent

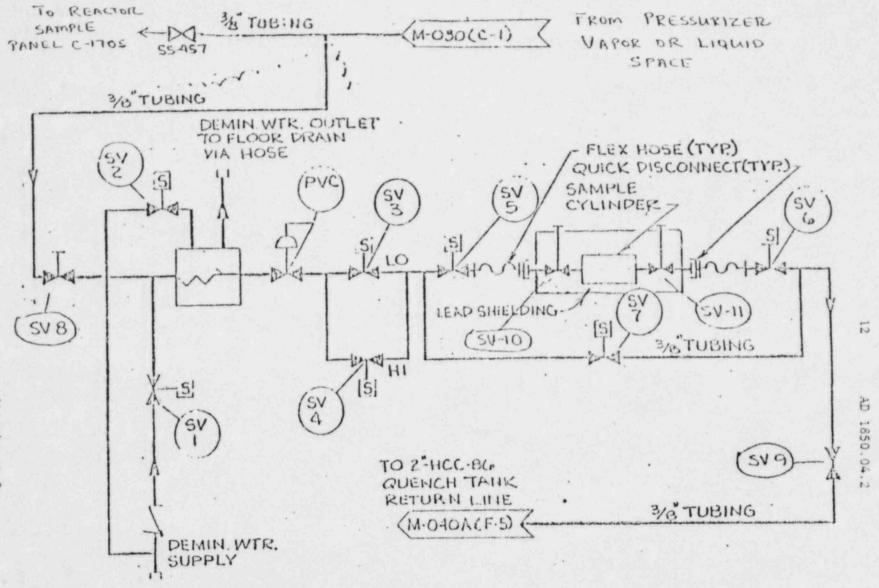
If the low range probe (HP-270) is used:

Date time	RM-16 Sample Reading in mR/hr	RM-16 Background Reading in mR/hr	Net dose rate in mR/hr	Xe-133 in uCi/cc equals net mR/hr times 2.7
-				

If the high range probe (RD-17A) is used:

.

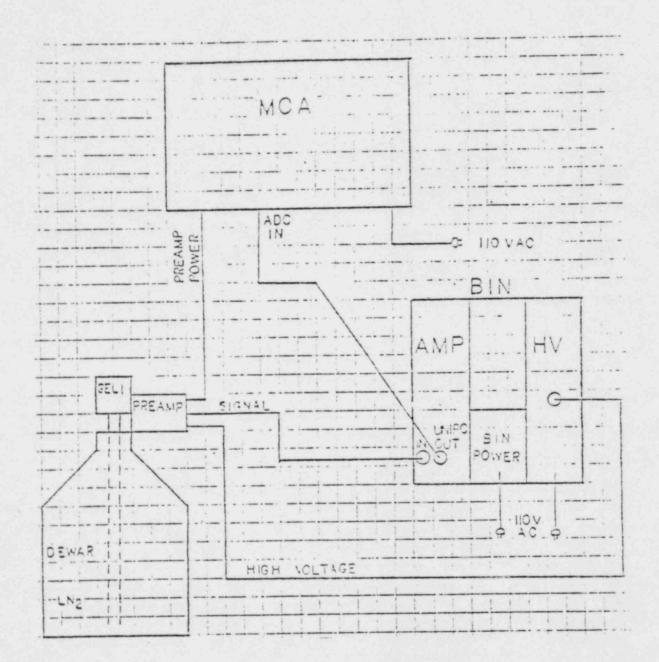
Date time	RM-16 Sample Reading in R/hr	RM-16 Background Reading in R/hr	Net dose rate in R/hr	Xe-133 in uCi/cc equals net R/hr times 5.2 x 10 <sup>4</sup>
				who and the



EMERGENCY REACTOR COOLANT SAMPLING

Attachment 2

AD 1850.04.2



Portable GeLi Gamma Spectroscopy System

14 AD 1350.04.2

NUCLIDE	GAMMA ABUND	HALF-LIFE(MIN)	KEV
CR-5:			
HN-54	0.99970	450144.	834.827
00-00	0.99960	2.7688615+06	1173.21
28-45		351504;	1115.52
KR-87	0.49400	76.0000	402.550
ZR-95	0.54600	74320.0	756.720
28-97		1020.00	743.400
NB-95	0.99000	20544.0	765.790
1-131	0.82000	11577.0	364.500
1-132			
1-133	0.87000	1248.00	529.839
	0.15300	52.6000	1072.55
I-134			
XE-133	0.10200	3125.04	233.130
XE133M	0.90400	550.200	249.741
XE-135	0.81200		125:527-
XE135A		1.5783775+07	661.633
CS-137	0.85000		1435.85
CS-138	0.75000	32.2000	
BA-140	0:23800	18417.6	151.180
KRSSH	0.75500	263.800	
Y91M	0.94900	49.7000	525.570
MG=203	0:81500	67334.4	279:225
SN-113	0.64000	165600.	371.700
SR-85	1.00000	93888.0	513.980
3A-133	0.67000	5:72904CE+06	355.700
NA-22	0.99950	1.3770722+06	1274.52
TA-182	0.35800	165600.	1121.30
NA=24	.97993		13919190
I-135	0.29200	396.600	1260.41
4-157	0.32000	1434.00	685.700
-36-7		76723.2	177.593
	0.99130	109.320	1273.04
AR-41	0.99984	120744.	687.253
90-46			113:990
-NR-85	*:30000E-03 -	17.3000	1936.00
R9-88	3.22100	7.1481602106	344.200
EU-152	0,26710		
58-124	0.98000		1345.80
CU-64	5.000000E-03	762.600	
BR-94	0.41600	31.8000	831.600
T= 71	2:20000E-03-	84254.4	1208.00
Y-92	0.13720	211.800	934.500
TE-132	0.68000	4680.00	226.200
XE131.7	2.0000008-02-		
KR-90	0.53000	C.53866	121.500
XE-137	0.32000	3.84000	455.380
			258.310
XE-139	0.45000	0.67333	218.570
CS-139	. 6.700000E-02	9.30000	1253.23
-BA+137	0-19000		
PU-238	3.8000002-04	4.6147682+07	43.4500
NP-239	0.27800	3384.00	105.140
-NN=55			045.5CC
and the second se	0.53400	585.000	1024.30
SR-91	0.64100	15.6000	1031.95
R3-89	0.83000		795.805
		18720.0	\$19.500
CS-136	1.00000	306800.	122.060
CO-57	0.85200		145.400
CE-141	0.45000	46723.0	220.900
KR-89	0.22500	3.16000	
PA-233	0.34000	38880.0	311.890
CE-143	0.41300	1980.00	293.240
F-18	1.94000	109.700	511.000
CE-144	0.10800	409248.	133.530
-AU-198	0.94700		411.800
AGIIOM	0.73300	360576.	654.650
NI-65	0.25700	153.600	1481.90
-12-00			1099.22
TC99M	0.90000	361.800	140.300
	0.95330	2415.60	1596.18
LA-140			
-0-25	0.28000	171.600	196.300
KR-83	0.14000	4001.40	739.580
N0-99			
- 61-38	0.40000	37.1900	658.100
		73.6000	000+100
N8-97 SR-92	0.90000	162.600	1383.94

# \*\*\*\*\*\*\*\* EFFICIENCIES FOR GEOMETRY 30 DETECTOR 1 \*\*\*\*\*\*\*\*\*

# 40 ML, STEEL + LEAD, COLLIMATED, 1.25 INCHES

	10 1.141E-08	-1.837E-08	2:794E-03	4.053E-08	5.657E-09	7.640E-08	1.003E-07	1.286E-07	1.615E-07	1.991E-07	
	20 2.416E-07	2.890E-07	3.412E-07	3.984E-07	4.603E-07	5.270E-07	5.983E-07	6.741E-07	7.542E-07	8.383E-07	
	30 9.264E-07	1.018E-06	1.113E-06	1.212E-06	1.3136-03	1.41BE-06	1.524E-05	1.6336-06	1.745E-06	1.858E-08	
	40 1.973E-05	2.087E-05	2.2062-06	2.325E-06	2.444E-06	2.564E-08	2.684E-06	2.805E-06	2,925E-05	3.045E-04	
	50 3.166E-06	3.286E-06	3.403E-06	3.525E-06	3.843E-03	3.761E-06	3.877E-06	3.992E-05	4.107E-05	4.220E-03	
	60 4.331E-03	4.442E-06	4.551E-06	4.6588-08	4.764E 06	4.888E-06	4.970E-05	5.071E-03	5.170E-06	5.237E-06	
	70 - 5.362E-06	5.456E-03	5.547E-06	5.637E-05	5.725E-0.5	5.010E-06	5.894E-06	5.976E-06	6.053E-06	6.134E-06	
	80 6.210E-05	6.284E-06	6.357E-08	6.427E-06	6.4956-03	6.561F-05	6.626E-03	6.4BBE 0.5	6.749E .05	6.000F-06	
	90 6.855E-06	6.920E-06	6.973E-06	7.024E-06	7.074E-05	7.122E-05	7.150E-05	7.2126-05	7.255E-06	7.293E-05	
	100 7.335E-03	7.3738-06	7.409E-05	7.443E-06	7.476E-06	7.507E-05	7.537E-05	7.566E-05	7.592E-03	7.616E-05	101 C
	110 7.6428-06	7.665E-06	7.685E-05	7.703E-05	7.7241-03	7.742E-05		7.772E-04	7.786E-03	7.79BE-05	
	120 7.010E-06	7.820E-05	7.828E-06	7.033E-06	7.8436-06	7.U-19E-06		7.8578-05	7.850E-05	7.061E-06	
	-130 -7.882E-08	7.862E-06	7.8310-03	7.859E-05	7.8531.05	7.0521-03		7.8428 06	7.034E-08	7.8296.05	
	140 7.8228-06	7.813E-06	7.6046-05	7.795E-06	7.70-1E-05	7.7/36-06		7.749E-05	7.7351-06	7.2238-06	
	150 7.709E-06	7.694E-06	7.679E-06	7.663E-06	7.6478-06	7.630E-06		7.595E -06	7.577E-06	7.5595-06	
		- 7.520E-06	7.500E-06	7.480E-06	7.4505-05	7.4398 05	7.417E-05-		7.3746-05	7.3316-05	
	170 7.329E-06	7.306E-06	7.2836-06	7.259E-05	7.235E-05	7.2126-05		7.1635-06	7.1386-05	7.1. E-03	
	180 7.0888-06	7.063E-06	7.037E-05	7.011E-06	6.905E-06	6.959E-06		6.907E-06	6.000E-06	6.053E-05	
	-190 6.027E-05	6.800E-05	6.773E-06	6.745E-06	6.710E-06	6.691E-06		6.335E-06	6.3001-03	6.5801-06	
	200 6.552E-06	6.525E-06	6.497E-05	6.449E-06	6.441E-05	6.4126-06		6.353E 06	5. J. THE -05	6.300E 05	
	210 6.271E-06	6.243E-06	6.215E-06	6.187E-05	6.156E-06	5.130E-05		6.073E-06	6.045E-05	6.01/E-06	
	- 220 - 5.908E-06	5.940E-06	5.9322-05	5.904E-06	5.075E-06	5.8471-06		5.7911-06	5.7431 -06	5.735E 04	Un
	230 5.707E-08	5.679E-04	5.6516-06	5.623E-06	5.5956-06	5.568E-06		5.512E-06	5.485E-03	5.457E-04	
	240 5.430E-06	5.402E-06	5.375E-06	5.348E-06	5.321E-06	5.293E-06		5.239E-06	5.213E-05	5.188E-08	
	-250- 5.159E-06	5.087E-06	5.0631-06	5.039E-06	5.0160-05	4.9936-06	The second s	4.947E-05	4.9258-03		
	260 4.880E-06	4.859E-03	4.8371-06	4.815E-05	4.794E-05	4.773E-06				4.703E-05	
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0 0	290 4.299E-06	4.2828-06	4.265E-06	4.2402-08	4.231E-05	4.215E-08		4.1826-03	4.163E-05	4.150E-06	
4 0	300 4.1348-05	4.11BE-08	4.103E-06	4.087E-06	4.0728-03	4.053E-03		4.023E-06	4.011E-05	3.996E 06	00
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op	320 3.840E-03	3.8278-06	3.81.3E-06	3.800E-06	3.7838-03	3.773E-03		3.7471-03	3.734E-06	3.721E-06	ò
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	360 3.303E-06	3.352E-06	3.342E-06	3.332E-06	3.322E-06	3.312E-06	3.301E-06	3.291E-06	3.201E-06	3.272E-06	
	+370 3.262E-06	3.252E-08	3.242E-06	3.233E-06	3.223E-06	3.2136-05	3.204E-04	3.195E-06	3.1051-06	3.176E-06	
	380 -3.137E-03	3.157E-06	3.148E-06	3.139E-05	3.130E-05	3.121E-03	3.112E-05	3.103E-06	3.094E-03	3.0831 -03	
	390 3.077E-06	3.060E-05	3.040E-05	3.051E-05	3.0428-06	3.0345-05		3.0178-06	3.0071-06	3.001E -05	
	- 400 2.992E-06	2.984E-05	2.9758-05	2.9680-05	2.960E-05	2.9526-05		2.9365 06	2.928E-06	2.9200 06	
	. 410 2.9125-06	2.905E-06	2.89/E-06	2.889E-05	2.082E-05	2.0746-03		2.0591-06	2.051E-06	2.044E-05	
	420 2.837E-06	2.029E-06	2.8228-06	2.815E-05	2.8076-05	2.800E-05		2.785E-05	2.779E-06	2.7728-06	1
	430 2.765E-05	2.7586-06	2.7516-05	2.7446-06	2.7376-06	2.7306-06		2.7176 -05	2.710E-05	2.703E-06	
	440 2.3975-05	2.690F-06	2.603E-06	2.677E-06	2.6701-05	2.6641-06		2.6511 06	2.6 "1 06	2.6381 05	
	450 2.6328-06	2.6265-05	2.6191-03	2.613E-06	2.60/E-06	2.601E-05	2.5950-06	2.5881-03	2.5028-05	2.5751 05	
	-460 2.570E-06	2.564E-06	2.550E-06	2.552E-06	2.547E-05	2.541E-06		2.529E -03	2.5231 -08 .		-
	470 2.5128-08	2.505E-05	2.500E-05	2.4951-05	2.489E-05	2.483E-05		2.4728-05	- Contract of the second se	2.4611-56	
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940	1.244E-06	1.243E-08	1.2416-08	1.240E-05	1.239E-06	1.2306-04	1.2366-06	1.2356-08	1.2346-03	1.2330-0	
950	1.2318-06	1.230E-05	1,229E-06	1.220E-03	1.2238-08	1.225E-08	1.2246-08	1.2236-05	1.2228 -06	1.2206 -0.	
950	1.219E-06	1.210E-06	1.217E-08	1.216E-06	1.2146-03	1.213E-03	1.212E-06	1.211E-05	1.3505-03	1.2008-0.	5
970	1.207E-05	1.203E-08	1.205E-05	1.204E-06	1.2026-06	1,2010-08	1.2000-08	1.199E-055	1.1905:08.	1.19/170.	5.
980	1.195E-06	1.194E-05	1.193E-06	1.1936-05	1.191E-03	1.1905-03	1.189E-03	1.187E-08	1.18st -04	1,1054,00	5
- 990	1.1046-06	1.183E-06	1.102E-03	1.101E-03	1.100E-03	1.176E-05		1.1766 05,	1,175E 03	1.1741-0/	
1000	1.173E-06	1.172E-06	1.171E-05	1.170E-03	1.1688-06	1.167E-06	1.1851-03	1.165E-05	1.1641-05	1+1631-08	
1010	1.162E-06	1.161E-06	1.130E-08	1.159E-03	1.1586-0.6	1.156E 06	1.155E-04	1.1548-06	1.153E-06	1.15.9 -08	
1020	1.1516-06	1.150E-06	1.1496-03	1.148E-06	1.1471-06	1.1428-04	1.145E 03	1.1441 03	1.14 SE 0.6	1.1428-02	
1030	1.141E-08	1.1408-05	1.1396-05	1.130E-04	1.135E-05	1.1358-03	1,1340-03	1.1338-06	1.1328-06	1.131E-04	
1040	1.130E-05	1.129E-05	1.1286-03	1.127E-03	1.1268-05	1.1256-04	1.1246-03	1.1231-06	1.1226-03	1.121E-0.	
-1050		1.119E-06	1.110E-03	1.117E-06	1.1138-05	1.115E-03	1.1146-05	1.113E-05	1.1128-03	1.1111 -0.	
1030	1.110E-06	1.109E-05	1.1081-04	1.1071-05	1.1031-04	1.1054 0.5	1.104E 03	1.104E 06	1.103E-03	1.1026-04	
1020	1,101E-06	1.100E-04	1.0998-03	1.0986-03	1.0971-08	1.0936-03	1.095E-04	1.0946-06	1.0930-06	1.092E-02	
1000	1.091E-03	1.0901-06	1.089E-03	1.0868-03	1.0871-05	1.083E 03	1.003E-05	1.005E-03	1.084E-03	1.003E-02	
1090	1.092E-06	1.081E-06	1.000E-03	1.079E-03	1.0786-06	1.677E-05	1.076E-06	1.075E-06	1.074E-06	1.074E-04	
1100	1.073E-06	1.072E-08	1.071E-03	1.070E-06	1.069E-06	1.0308-03	1.057E-05	1.035E-05	1.0658-06	1.065E-02	
1110	1.0541-08	1.063E-06 1.054E-05	1.0626-05	1.051E-05	1.0301 03	1.0596-08	1.0*.00-08	1.0511 -03	1.0576-08	1.0551-04	
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1130	1.046E-06 1.030E-06	1.045E-06 1.037E-05	1.045E-05	1.044E-03	1.043E-06	1.0428-06	1.0410-05	1.040E-06	1.039E-03	1.0591-04	
1150	1.029E-06	1.0296-06	1.035E-05 1.028E-05	1.035E-05 1.027E-05	1.0340-03	1.034E-05 1.025E-05	1.0330-03	1.032E-03 1.024E-08	1,031E-08 1,023E-08	1.0301-0/	
1130	1.021E-03	1.0201-08	1.0205-03	1.0196-03	1.0101-03	1.0178-05	1.0136-03	1.0131 05	1.0151-06	1.022E-0	
-1170	1.013E-05	1.0121-05	1.0128-06	1.011E-03	1.010E-05	1.0096-08		1.0081 -03	1.0071 -05	1.014E-0.	
1180	1.005E-05	1.005E-05	1.0041-03	1.0030-06	1.0021-05	1.001E-04	1.001E-05	9.999E-07	9.9921 -07	9.9811-0	
1120	9.975E-07	9.960E-07	9.961E-07	9.9535-07	9.9461-07	9.938E 07	9.930E-07	9.9238 -07	9.715E-07	9.9031 0	
1200	9.900E-07	9.893E-07	9.6H SE-07	9.827E-02	9.870E-07	9.0636-07	9.8551 -07	7.8 101: 07	9.840E-07	9.0335 -0	
1210	9.025E-07	9.0180-07	9.8101-07	9.803E-07	9.793E-07	9.70EE-07	9.701E-07	9.7748 07	9.766E 07	9.759E-0	
1220	9.7525-07	9.745E-07	9.737E-07	9.730E-07	9.7231-07	9.7124-07	9.20BE-07	9.7011-07	9.394E-07	9.687E-0	
-1230	9.680F-07	9.672E-07	9.865E-07	9.658E-07	9.651E-07	9.644E-07	9.63/1-07	9.6301-02	9.62.11-07	9.0105-0	- Berner
1240	9.609E-07	9.6021-07	9.594E-07	9.507E-07	9.5805-07	9.5731-07	9.557E 07	9.5501 07	9.5531-07	9.5461-0.	
1250	9.539E-07	9.5321-07	9.525E 07	9.5186-07	2.5111-07	9.5011-07	9.497E-07	9.4916 07	9.4046-07	9.4778-0.	
1260	9.470E-07	9.463E-07	9.4555-07	9.4508-07	9.4431-07	9.433E-07	9.4296-07	9.4236-07	9.416E-07	9.409E 0	
1220	9.403E-07	9.398E-07	9.389E-07	9.3020-07	9.3728-07	9.339E-07	9.353E-07	9.3531-07	9.3490-07	9.343E-0.	
1260	9.3335-07	9.329E-07	9.3231-07	9.313E-07	9.310E-07	9.303E-07	9.297E-07	9.2906-07	9.284E-07	9.277E-0	
1290 - 1290	9.2712-07	9.264E-07	9.2588 07	9.2511-07	9.245E-07	9.230F-07	9.232E-07	9.225E 07	9.21VE-07	9.2136-0	
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9 1330	9.020E-07	9.013E-07	9.007E-07	9.001E-07	U.995E-07	8.9091-07	8.903E-07	0.977E-07	8.971E-07	8,935E-0	1000
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P - 110	8.900E-07	8.894E-07	0.00000-07	0,0026-07	8.878E-07	H. H/QE 07	8,835E 07	0.0591-07	0.8531-07	8.0171-0	
E 1360	8.041E-07	8.8358-07	8.8302-07	8.8246-07	0.0196-07	8.01.20-07	8.8070-07	B.001E 02	0.775E-07	8.7076-0	
1370	8.784E-07	8.778E-07	0.772E-07	6.7575-07	8.731E-07	0.755E-07	0.749E-07	8.7446-07	0.730E-07	0.7336-0	
-1360	8.7270-07	8.7211-07	U.716E-02	8.710E-07	8.7041-07	0.6272-07	0.693E -67	8.4000 -07	8.6821-07	B.677E-0	
1390	8.671E-07	8.65%E-07	8.6301-07	8.2541-07	0.649E-07	8.643E-07	8.630E-07	8.632E-07	8.627E-07	8.621E-0	
1400	0.616E-07	8.610E-07	8.605E-07	9.400E-07	8.594E-07	0.5096-07	8.583E-07	8.5701-07	8.572E-07	8.567E-0.	
1410	8.5528-07	8.556E-07	8.551E-07	8.546E 07	8.5406-07	0.5350-07	8.5291-07	8.524E-07	8.5190 07	8.51 1 03	
1420	8.508E-07	0.503E-07	8.490E-07	8.4921-07	8.482E-07	H. 487E -07	B.475E-07	8.471E 07	0.4651-07	0.4211-0	
1430	8.455E~07	8.450F-07	0.4451-07	8.4405-07	0.13SE 07	0.4227 07	0.4240-07	8.4191 07	8.414E 07	8.4091 0	
-1440	0.404E-07	6.398E-07	6.3936-07	8.300E-07	D. 3113E-07	B-328E-07	B. 373E -07	0.3586 07	B.363E-07	0.357E 0	
14:50	8.352E-07	8.347E-07	8.3421-07	0.337E-07	8.332E-07	8.3271-07	8.322E-07	8.317E-07	8.3121-07	d. 307E-0	
1450	0.302E-07	8.2978-07	8.2921-07	8.297E-07	B.282E-07	0.2776-07	8.27.4E-07	8.2371-07	0.262E-07	B.257E-0	
1470	0.2529 07	0.2475 07	0.2421 02	0.2321 02	0.219 -07	0.2227 07	0.004 07	H. 21HF 07	8.214.07	0. 000 0	
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1530	7.9608-07	7.9838-07	7.9598-07	7.954E-07	7.950E-07	7.945E-07	7.941E-07	7.9341-07		7.0020-07
1540	7.9236-07	7.910E-07	7.9146-07	7.909E-07	7.9056-07	7.900E-07	7.098E-07	7.891E-07	ALCONTRACTOR AND ALCONTRACTOR	
-1550	7.0706-07	7.874E-07	7.0698-07	7.035E-07	7.8406-07		7,0526-07	-7.047107	7.0430-07	
1560	7.0346-07	7.8305-07	7.11256-07	7.021E-07	7.0176-07	7.0100-07	7.BOPE-07	7.004E-07		7.795E-07 7.755E-07
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	7 -51-07	7.701E-07	7.897E-07	7.89312-07	7.6076-07	7.605E-07	7.400E-07	7.675E-07		7.6276-07
	7 4E-07	7.6508-07	7,655E-07	7.351E-07	7.647E-07	7.6436-07	7.8378-07	7.635E-07		
		-7.610E-07	7,0141-07	7.610E-07	7:40%E-07	7.402E-07		- 2.574L 07	7.5906-07 -	
1820	7.5026-07	7.570E-07	7.574E-07	7.570E-07	7.5686-07	7.552E-07	7.5586-07	7.5540-07	a a second the second	7.543E-07
	7.5426-07	7.530E-07	7.534E-07	7.5300-07	7.526E-07	7.5221-07	7.5186-07	7.5146-07	7.510E-07	
-1440-	7.5026-07	-7,490E-07	7.4946-07	7.470E-07	7.403E-07	7.4026-07	"7.470E-07	7.4756-07	7.471E-07	7.4670-07
	7.4638-07	7.4576-07	7.455E-07	7.431E-07	7.447E-07	7.413E-07	7.440E-07	7.438E-07	7.4.121-07	7.4200-07
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1000	-7.3015-07	-7, 3075-07	7.3201-02	-7.375E-07	- 7.371E-07	- 7.367E-07	-7.363E-07	-7.359E-07	7,354E-07 -	7.3526.07
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1720	7.2021-07	7.170-307	.7.1505-01	7-1545-07	-7.152E-07	7.149E-07	-7.145E-07	7:1428-07	7.1306-07-	7.135E-07
-1730	-7.138E-07	7.163E-07	7.1246-07		7.117E-07	7.1146-07	7.1106-07	7.1076-07	7.1031-07	7.1006-07
		7.1206-07			7.003E-07			7.072E-07	7.0896-07	7.0448-07
1750	7.093E-07	7.093E-07	7.090E-07		-7.04BE-07	-7.0150-07	-7:042E-07	-7.030E-07	-7.0356-07-	7.03.907 00
-1760	7.0628-07	-7.059E-07		7.018E-07		7.011E-07			7.001E-07	6.99HE-07
1770.		7.025E-07	7.021E-07					6.971E-07	6.960E-07	8.96'E -07 '
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1840	6.740E-07		6.7341-07			6.725E-07		6.719E-07		6.6031-07 4
F un 1070			6.7041-07	8.701E-07	6.69BE-07	6.875E-07	8.692E-07			
-1600	- 4.400E-07	3.677E-07	· 6.674E-07			- 6.6651-07	6.662E-07	- 6:6:571-07	2.3356E-07	- 6.653C-07 C
1090	and the second sec			6.641E-07		6.635E-07	the second second second second			6.8246-07
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1430	-6.5.15E-07	1 1 5015-07	- 8.501E-07			6.4936-07	- 6.490E-07	- 6.407E-07	" &. 484E-07	6.4041-07
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1770	6.3706-07				61360107	3.3310.07	- A. 120E-07	-4. TAL-07	6.1231-07	5 . J. 10 . 10 . 1. 5
- 200	1.3446-07	6.341E-07	6.339E-07	2.3335-07	0.3336-0	013311-07	0.5202-07	010.00	a construction of a	

VEV

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Manual	Calculat	tions	for	Gamma	Spectroscopy
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Sample No	Description			
Sample Date and Time				
Counting Date and Time			Decay Time	min
Volumeml Coun	t Time	sec		
Detector	Geometry			
Nuclide	Energy	kev		
µCi/ml =AB	x ( <u>C +</u> 2	<u> </u>		
3.7 x 10 <sup>4</sup> x E x F	xGxHxJ			
Where:				
A = Counts in total peak B = Number of channels i C = Counts in first chan D = Counts in last chann E = Efficiency for the d F = Volume of sample in G = Gamma abundance of p H = Decay factor e-λt <sub>1</sub> . and t, is the decay	ntegrated nel of peak el of peak etector and ge milliliters hotopeak (decin WhereA equals	nal frac 0.69314	tion) 7 divided by the half	

and  $t_1$  is the decay time in the same units as the half-life.  $J = \frac{(1 - \epsilon \lambda t_2)}{\lambda}$  where  $t_2$  is the count time in seconds and  $\lambda$  is in inverse  $\lambda$  seconds. If the count time is less than 10% of the halflife, simply enter the count time in seconds for "J".

# Davis-Besse Numer Station

Unit No. 1

Administrative Procedure AD 1850.06

Radiation, Contamination and Dirborne Radioactivity Monitoring during Emergencies at the Davis-Besse Administration Building (DBAB)

# NUCLEAR SAFETY RELATED

Record of Approval and Changes

Prepared By Mich	ael P. Home	6/8/82
		Date
Submitted By	D. W- Briden	
	Section Head	Date
Necommended By	Addayer	11/2/82
	SRB Chairman	- 4/ 4/ 92 Date
QA Approved C	T. Daft / Sch	 
	Quality Assurance Director	Date
Approved By	Tronunay	12/8/82
	Station Superintendent	Date

Revision	SRB		OA		Sta. Supt.	
No.	Recommendation	Date			Dua. Dupt.	
	Marchine Machon	Date	Approved	Date	Approval	Date

#### 1. PURPOSE

1.1 To provide instructions for radiation, contamination and airborne radioactivity monitoring during emergencies at the Davis-Besse Administration Building after it has been determined by the Chemist and Health Physicist or designee.

1

- 1.2 To provide instructions for issuing personal dosimetery for emergency response personnel at the DBAB.
- 1.3 Section 3.1 through 3.5 are to be implemented after the Chemist & Health Physicist or designee has declared that higher than radiological background levels are detected, as determined from a radiation reading, contamination smear, and an airborne I-131 sample collected outside the North Exit of the DBAB.

# 2. REFERENCES

- 2.1 HP 1601.04, Radiation, Contamination and Airborne Radioactivity Areas
- 2.2 HP 1602.01, External Personnel Radiation Exposure Monitoring
- 2.3 HP 1604.01, Personnel Decontamination
- 2.4 Code of Federal Regulations 10 CFR 20
- 2.5 LI 4768.00, Stabilized Assay Meter SAM-2
- 2.6 EI 1300.07, Technical Support Center Activation

#### PROCEDURE

- 3.1 Airborne Radioactivity Surveys
  - NOTE: Airborne Radioactivity Samples will only be taken when installed building monitors are not working, or as a check of the installed monitors, or to monitor areas not monitored by installed monitors.
  - 3.1.1 Collect air sample using a Low-Volume air sampler, place a charcoal and particulate paper in the sampler.
  - 3.1.2 Collect the sample for 10 minutes. Record start and stop time. Record Sample Flow Rate and Times on the Lab Data Card.

3.1.3 When sample has been collected, remove charcoal and particulate filters from sampler and place in plastic bag and deliver to C&HP lab in the DBAB with Lab Data Card.

2

- 3.1.4 Sample will be analyzed with the SAM-2 or another instrument of equal sensitivity as determined by C&HP personnel.
- 3.1.5 To determine iodine activity in µCi/ml use the following formula for the SAM-2.

# Total Counts (Flow Time) (Flow Rate) (Count Time) (Efficiency) (0.9) (28317) (2.22E+6) in CFM) (in min) (Efficiency) (0.9) (28317) (2.22E+6)

- NOTE: Other Isotopes may be analyzed with the SAM-2 but it will require resetting the instrument voltages. This should be done by experienced H.P. Techs. or Supervisor.
- 3.1.6 Record all data on Attachment VI.

# 3.2 Contamination Surveys

- 3.2.1 Contamination surveys should be completed on a routine schedule, ie once every 4-8 house during the emergency as indicated on Attachment 1.
- 3.2.2 Areas to be surveyed are the Chem Lab, ECC, TSC, Media Center, Lobby and as directed by the H.P. Supervisor.
- 3.2.3 Smears should be counted with a BC-4, Frisker-RM-14 or PRM-4A or the equivalent as determined by C&HP personnel.
- 3.2.4 Report contamination in dpm/100cm<sup>2</sup> or dpm/smear.
- 3.2.5 To figure the activity use the following formula:

(Counts per min. - background) (Equipment Efficiency) = dpm

- 3.2.6 Ensure that all contamination in excess of 220 dpm/100cm<sup>2</sup> is either deconned to less than 220 dpm/100cm<sup>2</sup> or posted in accordance with HP 1601.04, Radiation, Contamination and Airborne Radioactivity Areas.
- 3.2.7 All swipe data should be entered on Attachment IV.

- 3.3 Radiation Surveys
  - 3.3.1 Radiation surveys should be run on a routine basis in work areas and areas where radioactive material might accululate, ie vent ducts, vent filters and the C&HP lab.

- 3.3.2 Areas should be posted in accordance with HP 1601.04, Radiation, Contamination and Airborne Radioactivity Areas.
  - NOTE: Radiation survey points are indicated on Attachment 1.
- 3.3.3 All survey data should be entered on Attachment V.
- 3.4 Personnel Monitoring
  - 3.4.1 TLD's and dosimeters will be issued by C&HP personnel during emergencies to the following people listed on Attachment II.
  - 3.4.2 Personal dosimetry will be picked up when arriving on site and returned prior to leaving site.
  - 3.4.3 Emergency Personnel Dosimetry Issue Log (Attachment III) will be filled out for all persons issued dosimetry during the emergency.
  - 3.4.4 Dosimetry shall be worn for duration of emergency and controlled by C&HP persons at DBAB.
- 3.5 Personnel Decon during Emergencies
  - 3.5.1 Personnel are required to monitor their entire body with a frisker to ensure there is no excessive contamination on the body before leaving the control area between the Security Stations in the lower north half of the DBAB.
  - 3.5.2 If contamination exist in amounts of 350 to 500 cpm above background, then personnel decon must be performed in accordance with HP 1604.01.
    - NOTE: Use Radiac Toweletts and/or Spray Foam for initial decon.
  - 3.5.3 Simple decon methods should be used whenever possible. Rinse skin with demin water and catch excess in sink or bucket.

- NOTE: This will normally be performed in the Radiological Testing Laboratory.
- 3.5.4 Recheck decon effort after each decon so as to minimize water use.

\* \*

- 3.5.5 Clothes should be bagged and saved, shoe and hands may be deconed with tape.
  - NOTE: Personnel or personal items are deconed when contamination levels decrease below 200 cpm above background during the emergency.
- 3.5.6 If further decon is required the individual(s) may be sent back on the station when possible.
- 3.5.7 If decon can't be accomplished or the individual can't reenter the station and or injuries exist the individual may be sent to the Magruder Hospital or St. Charles and treated.
  - NOTE: If iodine contamination of skin is suspected and can not be removed from skin by normal decon and the contamination level is greater than 2000 d/m an evaluation will be made by the medical physician. Otherwise the iodine can be confirmed by using the SAM-2 to measure the contamination. Iodine contamination can be absorbed through the skin.

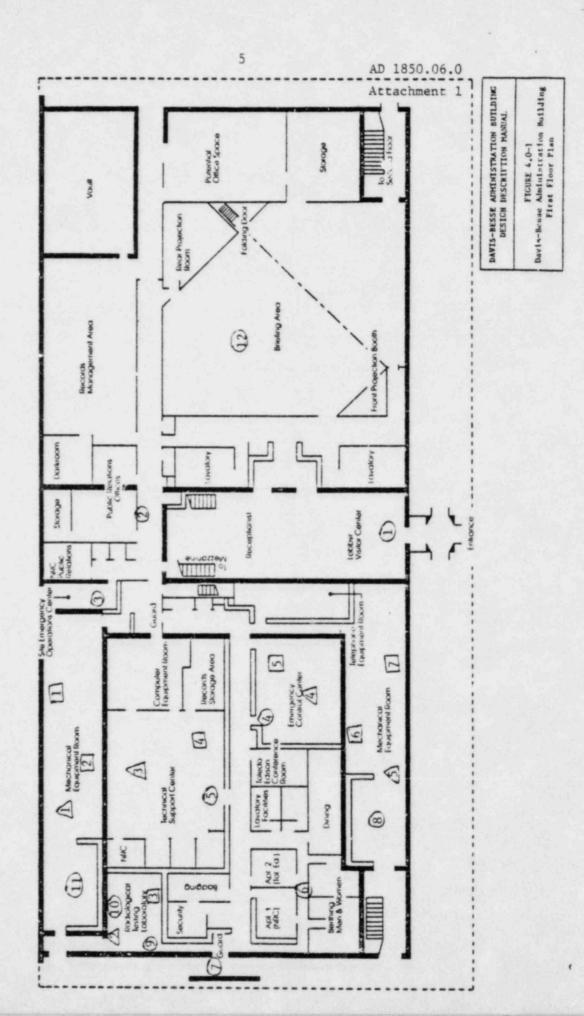
Circle indicates smear location

0

Box indicates radiation survey point

△ Triangle indicates airborne sample point

¥ Z



6 AD 1850.06.0

#### Attachment II

Persons Who Require Dosimetry

1) ECC

- a) Emergency Duty Officer
  b) NRC Communicator
  c) State Communicator
  d) Public Relations
  e) County Communicator
  f) Corporate Mgt. Communicator
  g) Emergency Ops.
  h) RMT's (8 to 10)
- 2) Technical Support Center

the DBAB.

a) Station Ops Manager
b) Station Ops Manager
c) Plant Staff (3)
d) Technical Engr.
e) C&HP Staff
f) Nuc. Engr. Manager
g) Plant I&C Systems Engr.
h) Plant Nuc. Systems Engr.

Persons not on the above list will be issued dosimetry on a need basis approved by the senior Chem and Health Physics individual at

3)

Attachment II Sheet 1 of 1

# 7 AD 1850.06.0

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# Attachment III

Emergency

# Personnel Dosimetry Issue Log

NAME (Last, First, Mi.)	SS#	Company/Address
		Constant and the second second

Attachment III Page 1 of 1

# DAVIS-BESSE SPECIAL SMEAR SURVEY RESULTS

# AD 1850.06.0 ATTACHMENT IV

	DE BY			DATE		TIME
STRUMENT	USED (Beta)		INSTRUMENT	USED (Alpha)		
				SMEAR	dpm/1	00 cm <sup>2</sup>
LEVEL	BLDG.	ROOM NO./NAME		LOC. NO	Beta	Alpha
					1999	
IGNATURE	TITLE	VE	RIFICATION	1	DATE	

DAVIS-BESSE NUCLEAR POWE RADIATION/CONTAMINATION			9 A ROUTINE SPECIAL	D 1850.06.0	) Attachment V UNIT NO. 1 ALL READINGS/MR HR
BUILDING		LEVEL	ROOM NAME	I/NO.	
SURVEY BY				DATE	TIME
INSTRUMENT USED L I. No.	CALIBRATIO	N DUE DATE	INSTRUMENT USED	L. I. No.	CALIBRATION DUE DATE
CONTACT READINGS CIRCLED				CONTAM	NATION LOCATIONS "BOXED"

	PAGE 1 of 1	
	AREAS POSTED AS REQUIRED BY HP 1601.04	
SIGNATURE/TITLE	DATE	
		-

ATTACHMENT V

10 AD 1850.06.0 ATTACHMENT VI

# SPECIAL AIRBORNE ACTIVITY ANALYSIS

DateTester	Sample ID No
Room/Area Surveyed	Level
Equipment Used: Air Sampler L	I NoNext Calibration Date
Alpha Counter Used: LI No	β/γ Counter Used: LI No
Spectrometer Used: LI No	Tritium Analyzer Used: LI No
Sample: Start	Stop Flow
RESULTS FROM MPCAIR:	
NUCLIDE	ACTIVITY µCi/cc %MPC
1)	
2)	
the second se	
11)	
12)	
13)	
14)	
15)	
CAM Readings (I2)	
(Particulates)	
(Noble Gases)	

Attachment VI Page 1 of 2

AD 1850.06.0 ATTACHMENT VI

T	D.	-	-	*		2	÷
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- 44	4.4	-		-	~	•	

Sample: Start Time	Stop	Time	ml in Bubb	oler	_
Activity = (	_µCi/cc) (	ml in	bubbler)		
(	_min) (	_L/M) (10	00 cc/L)(0.9 but	ffler eff)	µCi/cc
PARTICULATES					
Filter Size 2"	, 4"	Sample:	Start Time	Stop Time	
Activity = $\frac{1}{(* cc)}$	(net C ( min) (2.2	PM) 2 x 10 <sup>6</sup> )	( eff)	= <u>µC</u>	i/cc
*Calculate volume i Time x cfm x 2.8 Time x L/M x 100	317 x 10 <sup>4</sup> cc/ft		cc		

11

If airborne radioactivity levels are less than  $1 \times 10^{-10} \ \mu \text{Ci/cc}$  for  $I^{131}$ ; no action is required. If airborne radioactivity levels are greater than  $1 \times 10^{-10} \ \mu \text{Ci/cc}$ , follow actions given in AD 1827.12.

RA-COMPANY MEMORANDUM	CATE Rev. 12 - November 29, 1982
All Davis-Besse Station Personnel	
Terry Murray TD Mener	
First Aid Response	

# ADMINISTRATIVE MEMORANDUM NO. 38-12

To meet the requirements of the Station Emergency Plan, its implementing procedures, and OSHA Standards, the following describes the organization of, and details the manning for first aid response activities at DBNPS.

#### I. ORGANIZATION

# A. During Normal Working Hours

First aid response shall consist of at least two first aid qualified employees. Designated responders shall be assigned on a weekly basis with postings in both SAS and the Control Room.

#### B. During Off-Normal Working Hours

First Aid Responders shall consist of at least two first aid qualified operators. The responders and a designated leader will be assigned by the duty Shift Supervisor. Other department personnel qualified in first aid shall be identified and posted in both SAS and the Control Room when they are assigned to weekend or back shift coverage. These persons shall be recognized as support to the non-licensed operators responding.

The following personnel hold first aid qualifications in American Red Cross multi-media standard first aid or the equivalent, and are qualified to be First Aid Responders at Davis-Besse Nuclear Power Station:

Ron Scott** Tom Isley** Ted Lang** Rich Jarosi** Bill Merce* Randy Baum* John Staton* Steve Henn*	Roger Fox Mike Widner Rick Hibert John Michalski Mary Ann Groot Jim Adams Erdal Caba	Tom Given Suichi Kato Vern Patton Terry Smith Chris Burns Larry Myers Craig Gillig	Rodney Lawrence Jim Fawcett Sam Childress John Bialorucki Larry Keller Jim Weaver
Earl Murphy Ray Zychowicz Teresa Scott Bill Smith Gary Schnabel Steve Hill Denes Cousino George Buder	Jim Faris Ron Durdel Fred Conn Don Fox Tom Higgins Marty Migot Tom Hansen Steve Fehrmann Barty Pastick	Richard Walleman Mark Klein Jeff Meleg John House Al Coons Paul Haugh Rudy Martin Bob Morrison	**Team Leaders *Alternate Team Leaders
Al Kohlenberg John Hartigan O'Neill Tate	Randy Patrick Ron Clark Jeff Cleveland Carlo Pocino	Neil Wilson Jim Theisen Tom Schell Mike McCloskey	

Rev. 12 - November 29, 1982

Administrative Memorandum No. 38-12 First Aid Response Page Two

Other station personnel qualified to treat an injured employee, through off-site certification (i.e., First Aid Responders, EMT, etc.).

Larry Kremke Dave Haley Clarence DeTray Dan Lenke Duane Jess Bill Nissen

During the immediacy of the moment, in the absence of a designated First Aid Team Leader or assigned alternate leader, a team member can and should perform such function so as to ensure prompt and proper care for the injured.

REFERENCES:

AD 1327.02, Medical Treatment of Injuries AD 1827.01, Annual Radiation Emergency Medical Exercise Special Order No. 19 - Site Nurse AD 1827.16, Search and Rescue HP 1604.01, Personnel Decontamination EI 1300.12, Administrative Controls

TDM/JLB/mdb

N IA-COMPANY MEMORANDUM

Rev. 11 - January 4, 1982 Rev. 12 - March 4, 1982 Rev. 13 - July 15, 1982

All Davis-Besse Station Personnel

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Terry Murray

UBJECT

Fire Brigade

# ADMINISTRATIVE MEMORANDUM NO. 39-13

- 1. In accordance with the Station Emergency Plan and Technical Specification 6.0
  - 1.1. Bill Nissen is the Fire Chief and Tom Almendinger is the Assistant Fire Chief.
  - 1.2 The following named men are Fire Captains:

Bob Morrison		John House	(Asst.	Capt.)	
Rick Walleman		Larry Myers	(Asst.		
Terry Smith		Larry Keller	(Asst.		
Mike McCloskey	E	Jim Fawcett	(Asst.		
Greg Schumaker	3	Steve Fehrmann	(Asst.		
Dan Lenke (Security)		Dave Haley		Capt.)	

- NOTE: In the absence of a Fire Captain on Shift, the Fire Chief or Asst. Fire Chief or Fire Marshall shall assume the duties of the Fire Captain.
- 1.3 The following named persons are the Fire Brigade Members necessary to meet the five member brigade:

#### OPERATIONS

Bob Morrison Rod Lawrence Craig Gillig Al Coons Dave Barker Larry Myers Don Bondy Tom Higgins Rick Walleman Neil Wilson Dan Staudt Vern Patton Paul Haugh Larry Keller Mark Klein John House Mike Migot Ron Clark Steve Laeng Don Fox Kim Stiger Jim Theisen Tom Hansen Greg Schumaker Tom Schell Gene Hillebrecht Tom Given Jim Fawcett Brian Young John Bialorucki Suichi Kato Steve Fehrmann

Administrative Memorandum No. 39-13 Page Two Rev. 13 - July 15, 1982

# SECURITY

1500-2300

0700-1500

Jim Bilgen

Dave Haley

Dan Lenke

Greg Hannan Jim Meisner Phil Shingledecker Neil Ammons

2300-0700

Bill Britenburg Jim Burr

1.4 The following named persons will be support Fire Brigade Members:

Nelson Karafa Bill Merce John Staton Mike Widner Ray Zychowicz Jim Michaelis Steve Feasel Bill Klippstein Rex Dietz Tom Almendinger Paul Timmerman Gerry Lammon Doug Ricci Ted Poremski Cal Hoffer Jim Magers Art Lewis Ron Flood Bob Mizik Kent Rhubright Ted Bergner Ted Lehman Terry Wagner Bob Bechtel Nate Wahl Dennis Snyder Scott Wise Dennis Gordon Larry Isbell

2. Fred Ross is the Fire Marshall

Thilu Terry D. Murray

TDM/WLN/jas

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ANY M	EMORANDUM	DATI	arch 25, 1983 Rev. 27
All	Davis-Besse Station Pers	sonnel	Page 1
Terr	y Murray Teny D	ming	
Eme	rgency Duty Officer (EDO)	· · · ·	cy Duties
	ADMINIST	TRATIVE MEMORANDUM	10. 41-27
1.	Emergency Duty Officers	(EDO's)	
	1.1 In accordance with following named in Emergency Duty Off	dividuals are qual:	mergency Plan, the lfied and designated as
	C. T. Daft R. R. Durdel J. A. Faris J. L. Freels B. L. Geddes C. J. Greer L. A. Grime S. A. Hall	D. A. 1 R. F. 1 D. L. J. H. J. L. S. G. 1 W. L.	Peters Nodes Syrowski Scott-Wasilk Wideman
	Station Emergency	Plan, are responsi	to the requirements in the ole for the administrative 00.12, Administrative
	Emergency Assistan		ned and are qualified as EDO in the Emergency
	Gary Downing Joyce Badik Judy Vineyard Dennis Gordon Kelly Clayton	Rex Rutledge Larry Konopka Debra Goetz Charles Rupp Jeff Lietzow	Richard Vollmar Rick Sharpe Marie Frazer James Adams
2.	Other Emergency Duties		
	the Shift Supervis		signee is to be notified by n which requires an to the NRC.
з.	EDO Schedule		
	A revised EDO schedule	for the second qua	rter of 1983 is attached.

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NY MEMORA	NDUM		March 25, 1983 Rev. 27
			Page 1
All Davis	-Besse Station Per	rsonnel	
Terry Mur	ray Taur F	mun	
	ienqu	) Mung	
Emergency	Duty Officer (EDG	0) and Other Emer	gency Duties
	ADMINI	STRATIVE MEMORAND	JM NO. 41-27
1. Emer	gency Duty Office:	rs (EDO's)	
1.1	In accordance with	th the Davis-Bess	e Emergency Plan, the
	following named :	individuals are qu	salified and designated as
	Emergency Duty 0:	fficers:	
	C. T. Daft	D	A. Huffman
	R. R. Durdel		F. Peters
	J. A. Faris		L. Rhodes
	J. L. Freels		A. Syrowski L. Scott-Wasilk
	B. L. Geddes C. J. Greer		G. Wideman
	L. A. Grime		L. Yarosz
	S. A. Hall		
1.2	Emergency Duty 0	fficers, in addit	ion to the requirements in the
			asible for the administrative
		n Section 5 of EI	1300.12, Administrative
	Controls.		
1.3			rained and are qualified as
			he EDO in the Emergency
	Coutrol Center (	ECC), if necessar	7.
	Gary Downing	Rex Rutledge	Richard Vollmar
	Joyce Badik	Larry Konopka	
	Judy Vineyard	Debra Goetz	Marie Frazer
	Dennis Gordon	Charles Rupp	James Adams
	Kelly Clayton	Jeff Lietzow	
2. Othe	r Emergency Dutie	5	
2.1			designee is to be notified by
			tion which requires an
	immediate report	and/or notificat	ion to the NRC.
3. <u>EDO</u>	Schedule		
A re	vised EDO schedul	e for the second	quarter of 1983 is attached.

Rev. 27 - Mar. 25, 1983

Admin. Memo No. 41-27 Attachment Page 2

EDO 2nd QUARTER SCHEDULE - 1983

Weekly Dates

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Individual Assigned

Mar. 28	-	April 4	Steve Wideman
April 4	-	April 11	*Bill Yarosz
April 11	-	April 18	Chuck Daft
April 18	-	April 25	Bruce Geddes
April 25			Larry Grime
May 2	-	May 9	*Jim Greer
May 9	-	May 16	Stu Hall
May 16	-	May 23	Dave Huffman
May 23	-	May 30	Bob Peters
May 30	-	June 6	Don Rhodes
June 6	-	June 13	*Jim Faris
June 13	-	June 20	Ron Durdel
June 20	-	June 27	Jim Freels
June 27	-	July 4	Bill Yarosz
July 4		July 11	*Jim Syrowski
July 11			Steve Wideman
July 18		July 25	Chuck Daft

\* Denotes that week in which the EDO must perform the Monthly Communications Link Test, in accordance with PT 5108.01. The Emergency Planning Group will be present to assist with the Communications Test each month.

WLY:nlf 03/23/83

NTRA-COMPANY MEMORANDUM	CATE Rev. 17 - August 31, 1982 Rev. 18 - October 16, 1982
All Davis-Besse Station · Personnel	Rev. 19 - February 28, 1983 7BM
Terry D. Murray To Murray	
TUS ECT	

# ADMINISTRATIVE MEMORANDUM NO. 42-19

In accordance with the Davis-Besse Emergency Plan, the following named people are qualified to be Radiation Monitoring Team Members. AD 1850.05, Radiation Monitoring Team Surveys, provides instructions for collecting samples.

Bill Armstrong Mike Beier Larry Bonker Rick Edwards

Radiation Monitoring Teams

Jack Ferguson Bill Frazer Dennis Hennen Russ Hofer Dave Jazwiecki Ford Kebker Linda Makatura Lynn Harder Terry Tate

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2.

Bob Finneran Randy Baum Jim Kalmback Greg McKarns Joan Niese Chuck Rider Reggie Rogers Ed Rohrer John Sankovich Phil Strahm Jim Syrowski Sy Syslo Kevin Melstad John Tapley Tim Thompson Tony Wakulenko Wayne Wiedenhef Mark Rowland John Blankemeyer Bilal Sarsour Pete Senuik Mike Parker Ted Lang Ron Wolfe Jennifer Scott-Wasilk Gary Downing Jeff Lietzow

AWB TDM/DWB/145