

Fort Calhoun Station Unit No. 1

TO: ONRR
USNRC

COPY No.: ---

DATE: July 24, 1981

SUBJECT: Fort Calhoun Station Unit No. 1
Operating Manual Changes

Please incorporate the following procedures into your copy of the Fort Calhoun Station Unit No. 1 Operating Manuals.

VOLUME II

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EMERGENCY PLAN

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EMERGENCY PLAN

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SECTION IV
EMERGENCY CONDITIONS

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1.0 CLASSIFICATION SYSTEM

1.1 The Omaha Public Power District emergency classification scheme with action level guidelines are based on NUREG-0654 and NUREG-0610. Emergency Classes are:

- A. Unusual Event
- B. Alert
- C. Site Emergency
- D. General Emergency

The purpose of this standardized classification is to provide a broad framework within which all emergency action can be taken and notifications made in response to abnormal plant situations. It is not possible to predetermine all such situations, and therefore the examples incorporated into this emergency plan can do no more than provide illustrative guidance. It is likewise not possible to meaningfully simplify all such examples into the four action levels and establish identical response patterns for each example in a given class. Considerable judgment and clarification may be needed for the individual examples to assure that their inclusion into the action level criteria does not reduce the effectiveness of the basic emergency plan. Appropriate clarification is provided for the examples used herein.

In general, the rationale connecting the four action level classes is to provide a mechanism for early notification of particular events which could lead to significant consequences given subsequent operator error or equipment failure and which might be indicative of more serious conditions not fully recognized at the time. The gradation of the action level classes provides more elaborate response preparations for more serious indicators.

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1.0 CLASSIFICATION SYSTEM (Continued)

Notwithstanding the goal to develop consistent response actions within each class, some judgment must be exercised in taking general response actions for those events that do not clearly fit into a particular class, but nonetheless deserve to be in a particular class as opposed to any of the other action level classes. A general discussion on each of the action level classes is given below.

1.1.1 Unusual Event

Unusual Events, as used for emergency planning purposes, generally characterize off-normal plant conditions that may not in themselves be particularly significant from an emergency preparedness standpoint, but could reasonably have the potential to increase in significance if proper action is not taken or if circumstances beyond the control of the operating staff render the situation more serious from a safety standpoint. Taken as a class, the frequency of the initiating conditions for such unusual events may be several times a year. It is important that the implementing details of the response program for Unusual Events do not adversely affect the corresponding programs for the other, more significant action level classes.

The basic response to the Unusual Event occurrence is for the shift supervisor to notify appropriate plant personnel of the details of the event and an assessment of the safety significance of the event. This should normally be accomplished within 15 minutes of the occurrence. If there

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1.0 CLASSIFICATION SYSTEM (Continued)

are no indications that the event is escalating, the appropriate plant personnel can report the incident to company management, who in turn will make arrangements for notifying the NRC and providing a written summary of the incident to appropriate State and local officials. The notification should be accomplished within a 24-hour period following the event.

If, on the other hand, the assessment does not lead to the conclusion that the event has been terminated safely, or it is uncertain that the event is being terminated safely, the requisite action will be to escalate the action level to a more severe class.

1.1.2 Alert

At the Alert action level small releases of radioactivity may occur (greater than technical specification limits for normal operation, but not life-endangering). It is the lowest level where emergency offsite response may be anticipated. Even so, from the standpoint of Federal, State, or local authorities the emergency response is one of establishing an organization to monitor the event and to make preparations for countermeasures should the accident escalate to a more severe condition. For some of these conditions activation of the Emergency Operations Facility might be appropriate, and some confirmatory radiation monitoring offsite could be involved. For most of the Alert events, however, the plant would be quickly brought to a safe condition and releases would be trivial. Any such events

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1.0 CLASSIFICATION SYSTEM (Continued)

would not require these extra measures, and further would not require emergency response notification beyond that provided for Unusual Event conditions.

From the standpoint of emergency preparedness response, the Alert action level will probably be the most difficult to manage in terms of the judgment needed to make the appropriate implementing decisions. In general, one does not expect adverse safety consequences for Alert conditions. One does, however, anticipate that emergency response capability will be needed for Site and General Emergencies. Alert conditions, being between accident extremes, will be hardest to preclassify with set response routines, and in many cases will be subject to judgment based on the specific details of the event in question. Care should be taken in alerting the offsite authorities to distinguish whether the significant releases are merely potential, likely, or actually occurring. Response of offsite authorities will be guided initially by this determination.

1.1.3 Site Emergency

The Site Emergency action level reflects conditions where there is a clear potential for significant releases, such releases are likely, or they are occurring, but in all cases where a core meltdown situation is not indicated based on current information. For all of these situations the offsite emergency planning authority should be notified as soon as a site emergency has been declared. Furthermore, the onsite Technical Support Center, the onsite Emergency

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1.0 CLASSIFICATION SYSTEM (Continued)

Operation Facility, and the Alternate Emergency Operation Facility should be activated. Care should be taken in alerting the offsite authorities to distinguish whether the "significant releases" are merely potential, likely, or actually occurring. Response of offsite authorities will be guided initially by this determination.

1.1.4 General Emergency

The General Emergency action level reflects accident situations involving actual or imminent substantial core degradation or melting with the potential for loss of containment.

Immediate notification of offsite authorities and activation of the Emergency Operation Facility (if not already activated) is required. Immediate followup action requires an assessment of whether an evacuation or sheltering is indicated, and if an evacuation is indicated, whether it can be completed prior to significant release and transport of radioactive material to the affected areas. The recommendation for no protective action involving the public, sheltering out to a fixed distance, or evacuation out to a fixed distance should be communicated to the offsite authorities at the soonest possible time following the declaration of a General Emergency.

1.1.5 Action Level Criteria

The following tables outline the licensee and offsite authority actions for each of the four emergency action levels. Some background information on release potential

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1.0 CLASSIFICATION SYSTEM (Continued)

and expected frequencies for the various classes is provided.

Note that there is a wide band of uncertainty associated with the frequency estimates. Associated example initiating conditions are provided with each table.

Clarifications are provided in the lists of example initiating conditions that would require a modification of the prescribed response. For example, most of the listed initiating conditions for the Alert level class are events that can be expected to be terminated quickly, and therefore do not require immediate notification of offsite authorities. Only those events which have the clear potential for escalating to a site emergency warrant prompt notification to offsite authorities.

The example initiating conditions listed after the immediate actions for each class are intended as general guidelines on the types of conditions that should be evaluated to establish specific in-plant instrumentation readings which are pertinent to confirm or modify, at an early time, the action level response initiated by the plant operating staff. However, whether the event is an alert, a site emergency, or a general emergency, there are many variables involved in going from plant instrument readings of a pre-accident situation to significant exposures to the public. Such readings may usefully serve as conservative criteria for determining when to mobilize various emergency organizations, but final decisions as to when to alert/notify the public are the decision of government officials.

In utilizing the action level criteria as the basis for

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1.0 CLASSIFICATION SYSTEM (Continued)

initiating emergency response activity there may be instances when the plant operating staff cannot determine quickly which of two action levels is appropriate for a particular occurrence. In those cases, the occurrence should be treated as within the higher of the action levels and the appropriate response for that level should be initiated.

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1.0 CLASSIFICATION SYSTEM (Continued)

<u>Class</u>	<u>Licensee Actions</u>	<u>Local Offsite Authority Action</u>
Unusual Event	1. Augment on-shift resources if required	1. Provide fire assistance if requested
<u>Class Description</u>	2. Assess and respond	
Unusual Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant.	3. Close out with verbal summary to offsite authorities followed by a written summary within 24 hours.	
<u>Purpose</u>	<u>or</u>	
Purpose of Unusual Event action level is to (1) have operating staff come to a state of readiness from the standpoint of emergency response in the event the handling of the initiating condition needs to be escalated to a more severe action level class, and (2) provide for systematic handling of Unusual Events information and its related decision-making.	4. Escalate to a more severe class	
<u>Release Potential</u>		
No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.		
<u>Expected Frequency</u>		
Several times per year per unit.		

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1.0 CLASSIFICATION SYSTEM (Continued)

EXAMPLE INITIATING CONDITIONS: UNUSUAL EVENT

1. ECCS actuation involving a valid initiation signal (automatic or manual initiation to ameliorate condition influenced by ECCS Parameter).
2. Radiological effluent technical specifications instantaneous limits exceeded.
3. Fuel damage indication. Examples:
 - a. High coolant activity sample requiring plant shutdown.
 - b. Failed fuel monitor indicates increase greater than 0.1% equivalent fuel failures within 30 minutes.
4. Abnormal coolant temperature and/or pressure or abnormal fuel temperatures outside of technical specifications limits.
5. Exceeding either primary/secondary leak rate technical specification or primary system leak rate technical specification requiring shutdown.
6. Failure of a safety or relief valve to close (reactor coolant system).
7. Loss of all offsite power or loss of on-site AC power capability.
8. Loss of containment integrity requiring shutdown by technical specifications.
9. Loss of engineered safety feature or fire protection system function requiring shutdown by technical specifications (e.g., because of malfunction, personnel error, or procedural inadequacy).
10. Fire within the plant lasting more than 10 minutes after firefighting efforts have begun (only requires routine call to local fire department).
11. Indications or alarms on process or effluent parameters not functional in control room to an extent requiring plant shutdown or other significant loss of assessment or communication capability (not including loss of plant computer or meteorological instrumentation).
12. Natural phenomenon being experienced or projected beyond usual levels (when plant is in operation).
 - a. Earthquakes (detected on station seismic instrumentation).
 - b. 50 year flood or low water.
 - c. Tornado crosses site boundary.
13. Other hazards being experienced or projected.
 - a. Aircraft crash onsite or unusual aircraft activity over facility.
 - b. Train derailment onsite (for active rail lines crossing site).
 - c. Near or onsite explosion.
 - d. Significant near or onsite toxic or flammable gas release.

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1.0 CLASSIFICATION SYSTEM (continued)

14. Other plant conditions exist that warrant increased awareness on the part of the plant operating staff from an emergency preparedness point of view.
15. Rapid depressurization of PWR secondary side.

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1.0 CLASSIFICATION SYSTEM (Continued)

<u>Class</u>	<u>Licensee Actions</u>	<u>State and/or Local Offsite Authority Actions</u>
Alert		
<u>Class Description</u>		
Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant.		
<u>Purpose</u>		
Purpose of offsite alert is to (1) assure that emergency personnel are readily available to respond if situation becomes more serious or to perform confirmatory radiation monitoring if required, and (2) provide offsite authorities current status information.		
<u>Release Potential</u>		
Limited releases of up to 10 curies of I-131 equivalent or up to 10 ⁴ curies of Xe-133 equivalent.		
<u>Expected Frequency</u>		
Once in 10 to 100 year per unit.		
	<ol style="list-style-type: none"> 1. Promptly inform State and/or local offsite authorities of alert status and reason for alert as soon as discovered. 2. Augment resources by bringing on-site technical support center, EOF and Alternate EOF to standby status. 3. Assess and respond 4. Bring on-site monitoring teams and associated communications to standby status. 5. Provide periodic plant status updates to off-site authorities (at least every hour until status of event changes significantly). 6. Provide periodic meteorological assessments to offsite authorities and, if any significant off-site releases are occurring, dose estimates for actual releases. 7. For significant off-site release situations, activate centers and dispatch monitoring teams. Notify off-site authorities to activate centers and monitoring teams. 8. Close out by verbal summary to offsite authorities followed by news release within 24 hours. (In some cases de-escalation to the 	<ol style="list-style-type: none"> 1. Provide fire assistance if requested. 2. Augment resources by bringing EOF and any other primary response center personnel to standby status. 3. Alert to standby status other key emergency personnel including monitoring teams and associated communications. 4. Prepare to provide confirmatory offsite radiation monitoring and ingestion pathway dose projections if actual releases substantially exceed technical specification limits. 5. Maintain alert status until verbal closeout or de-escalation.
		or
		<ol style="list-style-type: none"> 6. Escalate to a more severe class.

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1.0 CLASSIFICATION SYSTEM (Continued)

Unusual Event Class may be appropriate if the initiating condition can not be closed out, but it has lost its Alert Class significance).

or

9. Escalate to a more severe class.

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EXAMPLE INITIATING CONDITIONS: ALERT

1. Severe loss of fuel cladding.
 - a. Very high coolant activity sample (e.g., 300 uci/cc equivalent of I-131, but not an iodine spike).
 - b. Failed fuel monitor indicates increase greater than 1% fuel failures within 30 minutes or 5% total fuel failures.
2. Rapid gross failure of one steam generator tube with loss of offsite power.
3. Rapid failure of steam generator tubes (e.g., several hundred gpm primary to secondary leak rate).
4. Steam line break with a) significant (e.g., greater than 10 gpm) primary to secondary leak rate or b) Main Steam Isolation Valve malfunction.
5. Primary coolant leak rate greater than 50 gpm with reactor at operating temperature and pressure.
6. Unexpected high radiation levels or high airborne contamination which indicate a severe degradation in the control of radioactive materials (e.g., increase of factor of 1000 in direct radiation readings).
7. Loss of offsite power and loss of all onsite AC power for more than 15 minutes.
8. Loss of all onsite DC power.
9. Coolant pump seizure leading to fuel failure.
10. Loss of capability to achieve plant cold shutdown.
11. Failure of the reactor protection system to initiate and complete a scram which brings the reactor subcritical.
12. Fuel handling accident with release of radioactivity to containment or fuel handling building.
13. Fire of greater than 10 minute duration potentially affecting safety systems' performance.
14. All alarms (annunciators) lost.
15. Radiological effluents greater than 1000 times technical specification instantaneous limits (an instantaneous rate which, if continued over 2 hours, would result in about 1 mR at the site boundary under average meteorological conditions).
16. Severe natural phenomena being experienced or projected (when plant is in operation).
 - a. Earthquake.
 - b. Flood or low water.
 - c. Any tornado striking facility.
 - d. Hurricane winds near design basis level.

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1.0 CLASSIFICATION SYSTEM (Continued)

17. Other hazards being experienced or projected.
 - a. Aircraft crash on facility.
 - b. Known explosion damage to facility affecting plant operation.
 - c. Entry into facility environs of toxic or flammable gases causing potential habitability problems.
 - d. Turbine failure causing casing penetration.
18. Missile impacts, from whatever source, on facility affecting plant operation.
19. Evacuation of control room anticipated or required with control of shutdown systems established from local stations.

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1.0 CLASSIFICATION SYSTEM (Continued)

<u>Class</u>	<u>Licensee Actions</u>	<u>State and/or Local Offsite Authority Actions</u>
<p>Site Emergency</p> <p><u>Class Description</u></p> <p>Events are in process or have occurred which involve actual or likely major failures of plant functions needed for protection of the public.</p> <p><u>Purpose</u></p> <p>Purpose of the site emergency warning is to (1) assure that response centers are manned, (2) assure that monitoring teams are dispatched, (3) assure that personnel required for evacuation of near-site areas are at duty stations if situation becomes more serious, and (4) provide current information for and consultation with offsite authorities.</p> <p><u>Release Potential</u></p> <p>Releases of up to 1000 ci of I-131 equivalent or up to 10^6 ci of Xe-133 equivalent.</p> <p><u>Expected Frequency</u></p> <p>Once in one hundred to once in 5000 years per unit.</p>	<ol style="list-style-type: none"> 1. Promptly inform State and/or local offsite authorities of site emergency status and reason for emergency as soon as discovered. 2. Augment resources by activating on-site technical support center, EOF, and Alternate EOF. 3. Assess and respond. 4. Dispatch on-site and off-site monitoring teams and associated communications for instances where radiation releases appear imminent. 5. Provide a dedicated individual for plant status updates to offsite authorities and periodic news briefings (perhaps joint with offsite authorities). 6. Make senior technical and management staff onsite available for consultation with NRC and State on a periodic basis. 7. Provide meteorological and dose estimates to offsite authorities for actual releases via a dedicated individual or automated data transmission. 8. Provide release and dose projections based on available plant condition information and foreseeable contingencies. 	<ol style="list-style-type: none"> 1. Provide any assistance requested. 2. Augment resources by activating EOF and any other primary response centers. 3. Assure that system for public warning notification of emergency status is on standby and initiate preparations for subsequent public periodic updates. 4. Dispatch key emergency personnel including monitoring teams and associated communications for instance where radiation releases appear imminent. 5. Alert to standby status other emergency personnel (e.g., those needed for evacuation) and dispatch personnel to near-site duty stations. 6. Provide offsite monitoring results to licensee and others and jointly assess them. 7. Continuously assess information from licensee and offsite monitoring with regard to need for changes to protective action already initiate for public and for mobilizing evacuation resources.

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2.0 CLASSIFICATION SYSTEM (Continued)

<u>Licensee Actions</u>	<u>State and/or Local Offsite Authority Actions</u>
9. Close out or recommend reduction in emergency class by briefing of offsite authorities and by phone followed by written summary within 8 hours after closeout.	8. Bring to standby system for placing milk animals within 2 miles on stored feed and initiate assessment of need to extend distance.
<u>OR</u>	
10. Escalate to <u>general emergency</u> class.	9. If significant releases are predicted to occur under <u>poor dispersion conditions</u> , recommend sheltering or evacuation as appropriate to minimize exposure to the public.
	10. Provide news briefings, perhaps with licensee.
	11. Maintain site emergency status until closeout or reduction of emergency class.
	<u>OR</u>
	12. Escalate to <u>general emergency</u> class.

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1.0 CLASSIFICATION SYSTEM (Continued)

EXAMPLE INITIATING CONDITIONS: SITE EMERGENCY

1. Known loss of coolant accident greater than makeup pump capacity.
2. Degraded core with possible loss of coolable geometry (indicators should include instrumentation to detect inadequate core cooling, coolant activity and/or containment radioactivity levels).
3. Rapid failure of steam generator tubes (several hundred gpm leakage) and indication of fuel damage.
4. PWR steam line break with greater than 50 gpm primary to secondary leakage and indication of fuel damage.
5. Loss of offsite power and loss of onsite AC power for more than 15 minutes.
6. Loss of all vital onsite DC power for more than 15 minutes.
7. Loss of capability to achieve plant hot shutdown.
8. Major damage to spent fuel in containment or fuel handling building (e.g., large object damages fuel or water loss below fuel level).
9. Fire beyond the design level affecting safety systems. (Inability to shut down the plant or extinguish the fire.)
10. All alarms (annunciators) lost for more than 15 minutes and plant is not in cold shutdown or plant transient initiated while all alarms lost.
11. a. Effluent monitors detect levels corresponding to greater than 50 mr/hr for 1/2 hour or greater than 500 mr/hr W.B. for two minutes (or five times these levels to the thyroid) at the site boundary for adverse meteorology.
b. These dose rates are projected based on other plant parameters (e.g., radiation level in containment with leak rate appropriate for existing containment pressure) or are measured in the environs.
12. Severe natural phenomena being experienced or projected with plant not in cold shutdown.
 - a. Earthquake and core or safety system damage probable.
 - b. Flood or low water.
 - c. Sustained winds in excess of design levels.
13. Other hazards being experienced or projected with plant not in cold shutdown.
 - a. Aircraft crash affecting vital structures by impact or fire.
 - b. Severe damage to safe shutdown equipment from missiles or explosion.
 - c. Entry of toxic or flammable gases into vital areas essential for safe shutdown where evacuation of the area constitutes a safety problem.
14. Evacuation of control room and control of shutdown systems not established from local stations in 15 minutes.

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Class

General Emergency

Class Description

Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity.

Purpose

Purpose of the general emergency warning is to (1) initiate predetermined protective actions for public, (2) provide continuous assessment of information from licensee and offsite measurements, (3) initiate additional measures as indicated by event releases or potential releases, and (4) provide current information for the public and consultation with offsite authorities.

Release Potential

Releases of more than 1000 ci of I-131 equivalent or more than 10^6 ci of Xe-133 equivalent.

Expected Frequency

Less than once in about 5000 years per unit. Life threatening doses offsite (within 10 miles) once in about 100,000 years per unit.

Licensee Actions

1. Promptly inform State and/or local offsite authorities of general emergency status and reason for emergency as soon as discovered (Parallel notification of State/local).
2. Augment resources by activating on-site technical support center, on-site EOF and Alternate EOF.
3. Assess and respond.
4. Dispatch on-site and offsite monitoring teams and associated communications.
5. Provide a dedicated individual for plant status updates to off-site authorities and periodic news briefings (perhaps joint with offsite authorities).
6. Make senior technical and management staff onsite available for consultation with NRC and State on a periodic basis.
7. Provide meteorological and dose estimates to offsite authorities for actual releases via a dedicated individual or automated data transmission.
8. Provide release and dose projections based on available plant condition information and foreseeable contingencies.

State and/or Local Offsite Authority Actions

1. Provide any assistance requested.
2. Activate public warning/notification of emergency status and provide public periodic updates.
3. Recommend sheltering or evacuation as appropriate for 2 mile radius and 5 miles downwind and assess need to extend distances.
4. Augment resources by activating EOF and any other primary response centers.
5. Dispatch key emergency personnel including monitoring teams and associated communications.
6. Dispatch other emergency personnel to duty stations within 5-mile radius and alert all others to standby status.
7. Provide offsite monitoring results to licensee and others and jointly assess these.
8. Continuously assess information from licensee and offsite monitoring with regard to changes to protective actions already initiated for public and mobilizing evacuation resources.
9. Recommend placing milk animals within 10 miles on stored feed and assess need to extend distance.

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1.0 CLASSIFICATION SYSTEM (Continued)

Licensee ActionsState and/or Local
Offsite Authority
Actions

- | | |
|---|---|
| 9. Close out or recommend reduction of emergency class by briefing of off-site authorities at ECC and by phone followed by written summary within 8 hours after closeout. | 10. Provide news briefings perhaps with licensee. |
| | 11. Consider relocation to alternate EOF if actual dose accumulation in near-site EOF exceeds lower bound of EPA PAG's. |
| | 12. Maintain general emergency status until closeout or reduction to emergency class. |

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1.0 CLASSIFICATION SYSTEM (Continued)

EXAMPLE INITIATING CONDITIONS: GENERAL EMERGENCY

1. a. Effluent monitors detect levels corresponding to 1 rem/hr W.B. or 5 rem/hr thyroid at the site boundary under actual meteorological conditions.
- b. These dose rates are projected based on other plant parameters (e.g., radiation levels in containment with leak rate appropriate for existing containment pressure with some confirmation from effluent monitors) or are measured in the environs.

Note: Consider evacuation only within about 2 miles of the site boundary unless these levels are exceeded by a factor of 10 or projected to continue for 10 hours.

2. Loss of 2 of 3 fission product barriers with a potential loss of 3rd barrier, (e.g., loss of core geometry and primary coolant boundary and high potential for loss of containment).

Note: Consider 2 mile precautionary evacuation. If more than gap activity released, extend this to 5 miles downwind.

3. 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.

Notes: a. For sequences where significant releases are not yet taking place and large amounts of fission products are not yet in the containment atmosphere, consider 2 mile precautionary evacuation. Consider 5 mile downwind evacuation (45° to 90° sector) if large amounts of fission products are in the containment atmosphere. Recommend sheltering in other parts of the plume exposure Emergency Planning Zone under this circumstance.

- b. For sequences where significant releases are not yet taking place and containment failure leading to a direct atmospheric release is likely in the sequence but not imminent and large amounts of fission products in addition to noble gases are in the containment atmosphere, consider precautionary evacuation to 5 miles and 10 miles downwind evacuation (45° to 90° sector).

- c. For sequences where large amounts of fission products other than noble gases are in the containment atmosphere and containment failure is judged imminent, recommend shelter for those areas where evacuation cannot be completed before transport of activity to that location.

- d. As release information becomes available adjust these actions in accordance with dose projections, time available to evacuate and estimated evacuation times given current conditions.

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1.0 CLASSIFICATION SYSTEM (continued)

4. Example PWR Sequences

- a. Small and large LOCA's with failure of ECCS to perform leading to severe core degradation or melt in from minutes to hours. Ultimate failure of containment likely for melt sequences. (Several hours likely to be available to complete protective actions unless containment is not isolated).
- b. Transient initiated by loss of feedwater and condensate systems (principal heat removal system) followed by failure of emergency feedwater system for extended period. Core melting possible in several hours. Ultimate failure of containment likely if core melts.
- c. Transient requiring operation of shutdown systems with failure to scram which results in core damage or additional failure of core cooling and makeup systems (which could lead to core melt).
- d. Failure of offsite and onsite power along with total loss of emergency feedwater makeup capability for several hours. Would lead to eventual core melt and likely failure of containment.
- e. Small LOCA and initially successful ECCS. Subsequent failure of containment heat removal systems over several hours could lead to core melt and likely failure of containment.

NOTE: Most likely containment failure mode is melt-through with release of gases only for dry containment; quicker and larger releases likely for ice condenser containment for melt sequences. Quicker releases expected for failure of containment isolation system for any PWR.

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2.0 ON-SITE EMERGENCY ORGANIZATION
(Refer to Table V.2)

2.1 DIRECTION AND COORDINATION

2.1.1 The normal plant power operation shift consists of seven persons. Three persons with NRC operator licenses and the Chemistry/Radiation Protection Technician may comprise the initial emergency organization. Initiation of the Emergency Team Call List will dispatch a full complement of the Emergency Organization during off hours. Approximately 35 members of the plant staff live within 10 miles of the station and it is expected at least 26 could normally arrive on site within 30 minutes of the emergency to augment the operating shift for emergencies above the "alert" level. The off hours notification of emergency members is now accomplished on an individual contact basis and will be initiated through District dispatches in the near future. During normal working hours the on-site emergency organization is activated by the Station Nuclear Emergency Alarm.

2.1.2 EMERGENCY ORGANIZATION

2.1.2.1 The normal operating organization of the plant is staffed and qualified to perform the actions that may be necessary to institute immediate protection measures and to implement the Emergency Plan and is designated as the responsible group for such actions. In all emergencies, the senior licensed member of the plant organization present initiates and administers the specific plan. This man is normally the operating

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2.0 ONSITE EMERGENCY ORGANIZATION (Continued)

2.1.2.1 (Continued)

Shift Supervisor. He will call upon technical staff assistance during all emergencies; however, the normal operating crew is self-reliant for a sufficient amount of time to allow other staff personnel assigned to the emergency operating organization to assemble and to integrate smoothly into the emergency operations. Although the Shift Supervisor temporarily is the Emergency Duty Officer, the authority and responsibilities for emergency action shall be transferred as soon as possible from the operating staff to the first qualified Emergency Duty Officer available at the activated Emergency Operation Facility.

2.1.2.2 An emergency operating organization has been designated to augment the operating shift and provisions have been made for rapid assignment of other persons to the emergency operating organization. The normal plant operating organization will provide the personnel for manning the Emergency Operation Facility, augmented by other O.P.F.D. personnel as required. The exchange of information with authorities responsible for coordinating off-site measures is the responsibility of the Emergency Duty Officer. The Emergency Duty Officer (EDO) has the authority and responsibility to unilaterally initiate any emergency actions including providing protective action recommendations

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2.0 ONSITE EMERGENCY ORGANIZATION (continued)

2.1.2.2 (continued)

to authorities responsible for implementing off-site emergency measures. The operating Shift Supervisor has this authority on shift at all times. During early response time to emergencies, the Shift Supervisor also has many reactor plant operational responsibilities. For this reason, provisions in the Emergency Plan allows transfer of EDO authority and responsibility to persons not having this shift operational responsibility. Activation of the Recovery Organization makes available the Recovery Manager, who is the long term, final senior management person with full authority and responsibility. Hence, the Emergency Duty Officer has the initial authority as the Recovery Manager's predecessor and acts in an interim authority until the Recovery Manager officially takes command. He may assign responsibilities as planned in Section V.2.2.1.2 for efficient assessment, but he will retain the full responsibility for notification and recommendation to those authorities who are responsible for off-site emergency measures. A technical assistant may conduct the communication of data, measurements and evaluation for him.

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2.0 ONSITE EMERGENCY ORGANIZATION (continued)

2.1.2.2 (continued)

Communication links are maintained on a 24 hour basis for exchange of information from the OPPD/EOF during the emergency in the following manner:

<u>Emergency Center</u>	<u>Primary & Alternate Operational Responsibility</u>
1. OPPD/EOF	Recovery Manager Emergency Coordinator
2. Nebraska State EDO	Operations Officer Communication & Warning Officer
3. Nebraska State Forward Command	State Civil Defense Director Asst State Civil Defense Director
4. Washington County EOC	City/County Civil Defense Director Washington County Sheriff
5. Iowa State EOC	Director, Office of Disaster Services Plan & Preparedness Officer
6. Iowa State Forward Command	Coordinator, State Radiation Response Team(s) Leader, State Radiation Response Team
7. Harrison County EOC	Communication Director Harrison County Sheriff
8. Pottowatamie County EOC	County/Municipal Civil Director Communication Director

2.2 PLANT STAFF EMERGENCY ASSIGNMENTS

2.2.1 EMERGENCY CONTROL

Fort Calhoun Station emergency activities shall be controlled from two locations:

2.2.1.1 Control Room (Shift Supervisor in Charge)

- a. The control room is designed to remain tenable under emergency conditions. The following

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2.0 ONSITE EMERGENCY ORGANIZATION (continued)

2.1 (continued)

Communications facilities are located

within the control room:

On Site

1. Station Alarm System

- (a) Nuclear Emergency Alarm, identified by intermittent howl.
- (b) Fire Alarm, identified by continuous howl.

2. Intra-Plant Communication System (Gaitronics)

- (a) Complete station paging.
- (b) Three party channel system for two way communication.
- (c) Two channels of sound powered communications.

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2.0 ONSITE EMERGENCY ORGANIZATION (Continued)

2.2.1.1 (Continued)

3. Intra-Plant telephone
4. Direct dial telephone

Off Site

1. Blair Telephone Company telephones
 - (a) Three outside lines.
 2. Four wire system connecting System Dispatcher, Line Dispatcher, and generating stations.
 3. District radio to Line Dispatcher at Omaha, Nebraska.
 4. Company radio-equipped vehicles.
 5. Microwave phone system for off-site calling.
 6. National Warning System Network.
 7. NRC Dedicated Operations Lines.
 8. Should all means of off-site communications fail, the Shift Supervisor should dispatch a member of the plant staff to the North Omaha Power Station, to establish contact with the off-site support groups. An account, compiled by the Shift Supervisor, describing plant status and the emergency condition that exists, will be relayed when contact is made.
- b. All on-site activities shall be coordinated between the control room and the Emergency Operation Facility.

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2.0 ONSITE EMERGENCY ORGANIZATION (Continued)

2.2.1.1 (Continued)

c. Operations Support Center

All on-site operations personnel will report to the Shift Supervisor in the control room complex. Additional operator personnel will assemble in the Shift Supervisor's office which is designated the Operation Support Center. Communications are available between the control room, the NRC incident response center, and Operation Support Center.

All station personnel not directly involved with operations and not having responsibilities in the Emergency Operation Facility will assemble in the warehouse area and be available to support reentry/repair efforts as required.

2.2.1.2 Emergency Operation Facility (Emergency Duty Officer in Charge)

- a. An Emergency Operation Facility has been designated for activation in the event of an Alert, Site, or General Emergency. The Emergency Operation Facility shall serve as a base of operations for all surveillance and supporting services. The Emergency Operation Facility is established at the former Guard House outside the protected

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2.0 ONSITE EMERGENCY ORGANIZATION (Continued)

2.2.1.2 (Continued)

area fence. Located at this facility are portable emergency radiation monitoring equipment and supplies, protective clothing, respiratory protective devices, essential precalculated emergency data and communication equipment.

- b. An Alternate Emergency Operation Facility is located at the North Omaha Power Station should the E.O.F. become untenable during the course of the incident. Direct communication is established and maintained with the control room throughout the emergency.
- c. The Emergency Operation Facility will be staffed by designated members (Fig. V.1) of the plant staff, offsite representatives, and other qualified personnel as may be requested by the licensee. The first qualified person reporting as an Emergency Duty Officer will take charge of and supervise activities of the Emergency Operation Facility until the emergency is over or until relieved by another EDO. Other persons designated as EDO's should provide assistance to the performing EDO in their area of expertise and normal responsibility and as otherwise requested. The Emergency Duty Officer (EDO) shall establish communications

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2.0 ONSITE EMERGENCY ORGANIZATION (Continued)

2.2.1.2 (Continued)

with the on-duty Shift Supervisor in the control room and provide communications and liaison with off-site support activities in the event of the General Emergency. A set of area maps with meteorological overlays is available at each of the following locations:

1. Fort Calhoun Station Control Room
2. Emergency Operation Facility (Former Station Guard House)
3. Alternate Emergency Operation Facility (North Omaha Station)
- d. A set of maps of the auxiliary building and containment floor plans are posted on the E.O.F. training room wall.
- e. Equipment Located at the Fort Calhoun Station Emergency Operation Facility
 1. Tag Assignment Board
 2. Area Map with Meteorological Overlays
 3. One (1) Emergency Kit
 4. Three (3) Team Monitor Kits
 5. Portable Calculator
 6. Rescue Vehicle Monitor Kit
 7. Portable Radiation Survey Instruments
 8. Telephones
 9. Emergency Information Handbook (Telephone numbers of NRC, State Patrol, plant personnel, etc.)

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2.0 ONSITE EMERGENCY ORGANIZATION (Continued)

2.2.1.2 (Continued)

10. Emergency Log
11. Portable Two-Way Radios
12. Tape Recorder
13. Typewriter

f. Special Procurement and Logistic Support

The Materials Management Division's internal procedures are compatible with emergency requirements to secure materials and services without delay. As part of Materials Management's internal procedures, a special procurement procedure for all declared emergency situations at the Fort Calhoun Station has been formulated. Materials Management will provide support to the Organization Recovery Manager (see Section IX for the description of this function) during any declared emergency. In addition, special purchase order numbers are assigned to the Recovery Manager to be used as required.

g. Assignment of Duties (Emergency Operation Facility and Emergency Monitoring Teams)

1. In order to provide an organized approach to the emergency situation, an emergency tag assignment board is used to designate and delegate the necessary preplanned actions until a qualified Emergency Duty Officer

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2.0 ONSITE EMERGENCY ORGANIZATION (Continued)

arrives. This duty assignment reduces the time lost due to lack of adequate directions, should the incident occur during off-normal work periods.

2. For each assignment tag, specific team members are designated for that task based on previous specialized training and skills. Although each team member must be familiar with all of the team duties and capable of performing any of the tasks that may be required of another team member, he is expected to develop more expertise in assignments in which he is designated a primary responsibility.
3. Tags and assignments are posted on the "Emergency Assignment Board" in the E.O.F. Operation Room.
4. As each Emergency Monitoring team member arrives at the Emergency Operation Facility he will remove the tag for the task from the tag board, that he is assigned and will immediately begin to perform that assignment.
5. Emergency duty tags will be displayed on the person of each team member so that others can identify him and his job assignment.

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2.0 ONSITE EMERGENCY ORGANIZATION (Continued)

2.2.1.2 (Continued)

6. The monitor will automatically perform the normal duties of the tag assignment upon arrival unless instructed otherwise by the EDO or the "Monitoring Team Coordinator" (Tag 15).
7. Emergency Team Personnel not being used and standby monitors will report to the monitoring team coordinator and then remain in the training room to assist as requested.
8. The monitoring team coordinator will dispatch and coordinate the activities of the monitors and monitoring teams as directed by the EDO.
9. Emergency Monitoring Team assignment tags are as follows:

TAG 1 and 1A - EOP RECORDER/PHONE TALKER
 - A. If not already done, contact the Control Room (Ext. 23) and inform the Shift Supervisor of your presence. If Control Room has not contacted all persons listed on the Emergency Call List, take over this function and call remaining persons on list.
 - B. Setup, operate and maintain the tape recorder.
 - C. Brief EDO on accident status and present conditions when he arrives.

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2.0 ONSITE EMERGENCY ORGANIZATION (Continued)

2.2.1.2 (Continued)

- D. Maintain EOF log book.
- E. Handle telephone communications.

TAG 2, 2A, 3 and 3A - RE-ENTRY TEAM
MEMBERS

- A. Move emergency kit, monitor kits, air samplers and breathing apparatus to the training room.
- B. Obtain and battery check high range survey instruments.
- C. Obtain a set of protective clothing. Don shoe covers and coveralls, check out and put on a TLD and high range dosimeter. Have other protective clothing ready to don on instruction from Monitor Team Coordinator.
- D. Check out a self-contained breathing apparatus for readiness to use. Check the mask for proper fit.
- E. Be prepared for entry to the Auxiliary Building, dressed as instructed by the Monitor Team Coordinator.
- F. Enter the Auxiliary Building as directed by the EDO through the Monitor Team Coordinator, and perform assigned tasks.

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2.0 ONSITE EMERGENCY ORGANIZATION (Continued)

2.2.1.2 (Continued)

TAG 4 and 4A - OVERLAY OPERATOR

- A. Setup and establish maps and overlays pertinent to the emergency conditions.
- B. Establish direct-line communications with the Control Room and obtain meteorological data.
 - 1. Wind speed and direction at 10 meters.
 - 2. Delta temperature measured at 110 meters.
 - 3. RM-052 and/or RM-062 radiation readings.
 - 4. Vent duct flow rate.
- C. Calculate diffusion factor and downwind activity (indicate data on overlay).
- D. Brief Emergency Duty Officer (EDO) on results.
- E. Assist the EDO on evaluation of results as requested.
- F. Maintain data in a current status as required by the EDO.

TAG 5, 6, 7 and 8 - OFFSITE MONITOR

- A. Obtain monitoring kit, staplex air sampler, Radeco, H-809V air sampler, 4 silver Zeolite cartridges, SAM-2 with RD-22 detector, water sampling bottles and vehicle.

NOTE: A member of the monitoring team will pick up vehicle keys and drive vehicle to ECC.

- B. Report to the Monitoring Team Coordinator when you are prepared to depart.
- C. When directed, proceed to designated location and take samples as assigned.

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2.0 ONSITE EMERGENCY ORGANIZATION (Continued)

2.2.1.2 (Continued)

- D. All samples will be labeled and saved in plastic bags unless otherwise notified.
- E. All communications with EOF will be on mobile radio Channel #1 unless designated otherwise.

TAG 9, 9A, 10 and 10A - GATE MONITOR

- A. Get available instruments from EOF, assemble, check batteries and make preparations for monitoring personnel and equipment.
- B. Monitor all personnel exiting the plant area paying particular attention to hands, feet and head area.
- C. Contaminated personnel will be sent to the West entrance of the EOF building for entry to the personnel decon station.
- D. All monitor teams returning from the plant will be closely monitored for contamination; anti-contamination clothing will be properly bagged if contaminated.
- E. All vehicles leaving the plant will be monitored, paying particular attention to tires and top. Vehicles returning to the site will not be routinely monitored unless specified by Monitor Team Coordinator.

TAG 11, 12, 13 and 14 - ON SITE MONITOR

- A. Obtain a full set of protective clothing to include a full face respirator, TLD and high range dosimeter.
- B. Obtain a survey instrument, clipboard, pencil and survey maps.
- C. Standby in the training room for further instructions from the Monitor Team Coordinator.

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2.2 ONSITE EMERGENCY ORGANIZATION (Continued)

TAG 15 - MONITOR COORDINATOR

- A. Be responsible to the EDO for all monitor team activities.
- B. Ensure the Emergency Status Board reflects current conditions.
- C. Ensure all surveys and data are documented by the monitor teams.
- D. Coordinate first aid coverage as required.
- E. Ensure all EOF personnel have been checked for contamination.
- F. Ensure a radiation survey of the EOF area has been conducted.

TAG 16 - RADIO OPERATOR

- A. Establish and maintain radio communication with Off-Site Monitor Teams, the Control Room and the Access Road Security Guard.

NOTE: The Off-Site Monitor Teams will normally communicate using mobile radio Channel #1.

- B. Report all messages to the EDO, in writing, so the EOF recorder can enter them in the log book.

TAG 17 - PERSONNEL ACCOUNTABILITY AND MESSAGE DISTRIBUTION

- A. Collect badges or names of personnel who exited the Auxiliary Building and any other person not turning in his badge to the security guard. Report these names to security personnel.
- B. Assist Security Guard as necessary in accounting for all personnel entering or leaving the site.
- C. Work with the security force/radio operator to inform the Monitor Team Coordinator of personnel status.
- D. Work with the Monitor Team Coordinator to copy and distribute messages and records within the EOF.

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2.0 ONSITE EMERGENCY ORGANIZATION (Continued)

2.2.1.2 (Continued)

TAG 13 - RESCUE SQUAD MONITOR

- A. Report to the Monitor Team Coordinator for briefing (injured personnel and locations).
- B. Obtain a radiation survey instrument and perform operational check. Also, obtain a personnel air sampler.
- C. Obtain four (4) high-range pencil dosimeters (and zero them).
- D. Meet the Rescue Squad and issue a dosimeter to each member. Brief them on location and probable condition of any casualties.
- E. Brief Rescue Squad on radiation hazards and other precautions to be taken.

NOTE: The Rescue Squad personnel shall not normally enter the auxiliary building unless personnel injuries dictate this entry necessary. The Squad will normally be met with injured personnel at the north emergency exit.

- F. Accompany Rescue Squad to pickup casualties and provide radiological coverage to include trip to the Hospital.
- G. Furnish Hospital personnel with following information, if known:
 - 1. Types and extent of radiation exposure.
 - 2. Levels of external contamination.
 - 3. Probability of internal contamination.
- H. Collect, read and record pencil dosimeters from Rescue Squad.
- I. Ensure Squad members, vehicle and equipment are free of contamination prior to release (medical technicians at the Hospital should perform vehicle and personnel survey).

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2.0 ONSITE EMERGENCY ORGANIZATION (Continued)

2.2.1.2 (Continued)

TAG 19 and 19A - PERSONNEL DECONTAMINATION

- A. Report to the Monitor Team Coordinator for briefing.
- B. Set up the Men's restroom as personnel decon center and prepare to receive contaminated personnel through the West door of utility room. The following will be set up for use at this area:

1. Frisker (RM-14/15/19)
2. Step-off pad with undress area
3. Containers for contaminated clothing

NOTE: Each individual who is contaminated or who has contaminated clothing must have his clothing bagged individually with the person's name and the time placed on each bag.

4. Cleaning material (soap, brushes, towels, etc.)
5. Clean clothing (i.e., paper coveralls and shoe-covers)

- B. Brief personnel on decon method to use (i.e., complete shower, wash hands, etc.).

NOTE: Complete showers should be avoided unless absolutely necessary to prevent spread of contamination to other parts of individual's body.

- D. Keep Monitor Team Coordinator briefed on personnel decon status.

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2.0 ONSITE EMERGENCY ORGANIZATION (Continued)

2.2.1.2 (Continued)

- E. Record names and survey results, initial and final, of personnel admitted to decon station.

TAG 20 - SAMPLE COUNTER/DOSIMETRY ISSUANCE

- A. Ensure all team members needing TLD's and dosimeters have them.

NOTE: All dosimeters will be zeroed before being issued.

- B. Maintain the TLD/dosimeter log.
- C. Set up a counting station in the training room or area designated by the Monitor Team Coordinator.
- D. Count all samples brought into the ECC and report results to the Monitor Team Coordinator. Ensure all samples are saved and labeled for future counting if needed.
- E. Collect radiation monitoring devices from team members as they return from assigned tasks.
- F. Keep the Monitor Team Coordinator informed on counting results/personnel exposures.

TAG 21 - OUTSIDE COORDINATOR

- A. Coordinate outside activities in the vicinity of the EOF.
- B. Ensure all personnel that have evacuated the plant are in two groups:
 - 1. Personnel exiting from the auxiliary building area.
 - 2. Personnel exiting the cold side of the plant.
- C. Ensure all contaminated personnel are sent to the emergency decon station.
- D. Ensure all vehicles leaving the plant area are monitored (except emergency vehicles).

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2.0 ONSITE EMERGENCY ORGANIZATION (Continued)

2.2.1.2 (Continued)

- E. Report names of any contaminated/injured personnel to the Monitor Team Coordinator.

TAG 22 - PUBLIC INFORMATION SPECIALIST

- A. Monitor status of emergency and relay timely and accurate information to the Emergency News Center.
- B. Maintain information time log for post emergency reference.

TAG 23 - TECHNICAL LIAISON

- A. Monitor status of emergency and assist Public Information Specialist in collecting and interpreting nuclear-related data.
- B. Serve as EOF contact for technical liaison assigned to assist official spokesperson at the Emergency News Center.

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Table V.2

MINIMUM STAFFING REQUIREMENTS
FOR EMERGENCIES

Major Functional Area	Major Tasks	Position Title Or Expertise	On Shift	Augmentation
Plant Operations and Assessment of Operational Aspects		Shift Supervisor (SRO)	1	--
		Shift Foreman (SRO) ⁽¹⁾		--
		Reactor Operator (RO)	1	--
		Assistant Reactor Operator	1	--
		Equipment Operators	2	--
		Auxiliary Operators	1	--
Emergency Direction and Control (Emergency Coordinator) ⁽⁴⁾		Shift Technical Advisor, Shift Supervisor or designated facility manager	1 ⁽²⁾	--
			1 ⁽²⁾	3 (ET Tag Nos. 1, 1A & 16)
Notification/ Communication	Notify licensee, State local and Federal personnel & maintain communication			
Radiological Accident Assessment and Support of Operational Accident Assessment	Emergency Operations Facility (EOF) Director	Senior Management	--	1 (Recovery Mgr)
		Senior Health Physics (HP) Expertise		1 (Supv - Chem/RP)
	Offsite Dose Assessment			
	Offsite Surveys			4 (ET-Tags 5, 6, 7, 8)
	Onsite (out-of-plant)		--	2 (ET-Tags 11 & 12)
	In-plant Surveys	C/RP Technicians ⁽³⁾	1	2 (ET-Tags 13 & 14)
Plant System Engineering, Repair and Corrective Actions	Chemistry/Radio- chemistry	C/RP Technicians ⁽¹⁾		1 (TAS for Radiochemistry)
	Technical Support	Shift Technical Advisor	1	--
		Core/Thermal Hydraulics	--	1 (Core Physics Coordinator)
		Electrical	--	1 (I & C Support Coordinator)
		Mechanical	--	1 (Maintenance/Q.C. Supv)
	Repair and Corrective Actions	Mechanical Maintenance/ Rad Waste Operator	1 ⁽²⁾	1 (TAS; Machinist Technician)
		Electrical Maintenance/ Instrument and Control (I&C Technician)	1 ⁽²⁾	1 (TAS, Gen. Maint Technician)
			1 ⁽²⁾	2 (TAS, Electrical Tech)
			--	1 (TAS, I&C Technician)

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Table V.2 (continued)

EMERG-V.2-22

**MINIMUM STAFFING REQUIREMENTS
FOR EMERGENCIES**

Major Functional Area	Major Tasks	Position Title Or Expertise	On Shift	Augmentation
Protective Actions (In-Plant)	Radiation Protection: a. Access Control b. HP Coverage for repair, corrective actions, search and rescue first- aid & firefighting c. Personnel monitoring d. Dosimetry	C/RP Technicians ⁽³⁾	1 ⁽²⁾	4(1-TAS R.P. Technician 1-ET TAG 9 1-ET TAG 21 1-ET TAG 21A)
Firefighting	--	--		Fire Brigade Blair Fire Dept. per Technical Specifications
Rescue Operations and First-Aid	--	--	2 ⁽²⁾	Blair Rescue Squad
Site Access Control and Personnel Accountability	Security, firefighting communications, personnel accountability	Security Personnel	All per Security Plan	
Total			8	26

- Notes: (1) The District's letter to the Commission dated April 2, 1981 provides our position on meeting on-shift staffing requirements.
- (2) May be provided by shift personnel assigned other functions.
- (3) These functions may not be augmented immediately. The noted Emergency Team (ET) Tag members will initially report to the EOF and will be under the direction of the EDO/Recovery Manager. The EDO/Recovery Manager will be responsible for establishing the priorities for their assignment to in-plant or out-of-plant functions.
- (4) Overall direction of facility response to be assumed by EOF director when all centers are fully manned. Director of minute-to-minute facility operations remains with senior manager in technical support center or control room.

3.0 AUGMENTATION OF THE ONSITE EMERGENCY ORGANIZATION

3.1 LICENSE HEADQUARTERS SUPPORT

3.1.1 TECHNICAL SUPPORT CENTER (TSC)

The on-site Technical Support Center for the short term effort is located in the service building at Fort Calhoun Station. A permanent TSC is under construction adjacent to the control room. The temporary TSC is the general office area of the Fort Calhoun Station.

The present area accommodates 25-30 people and contains the following communications equipment:

- 3.1.1.1 Gai-tronics for communication within the plant between the control room and the emergency control center. There are presently three (3) handsets.
- 3.1.1.2 Telephone communications system through local telephone facilities.
- 3.1.1.3 Microwave telephone communications. This could be used for off-site as well as on-site communications.
- 3.1.1.4 NRC incident response center phone. This communication link provides contact between the Region IV offices, the NRC incident response center, and the Technical Support Center.

The TSC area presently contains system drawings and detailed drawings of most equipment (i.e., valves). A complete and current copy of the Fort Calhoun operating manual is also available in the Technical Support Center. The Fort Calhoun operating manual includes operating

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3.0 AUGMENTATION OF THE ONSITE EMERGENCY ORGANIZATION

3.1.1 TECHNICAL SUPPORT CENTER (TSC) (Continued)

procedures, operating instructions, the site emergency plan, and situation specific emergency procedures.

Several editions of the Fort Calhoun Station Unit No. 1 Final Safety Analysis Report are available.

The short term Technical Support Center is located close to and on the same elevation as the main control room at Fort Calhoun Station.

Monitoring of both direct and airborne radiation will be available in the permanent Technical Support Center. The normal limits for direct radiation and airborne radioactivity are observed while the Technical Support Center is occupied.

The Technical Support Center will be manned following identification of an emergency classification. The O.P.P.D. personnel reporting to staff the Technical Support Center consist of a Technical Support Center coordinator and supporting personnel.

3.1.1.5 O.P.P.D. Technical Support Center Personnel

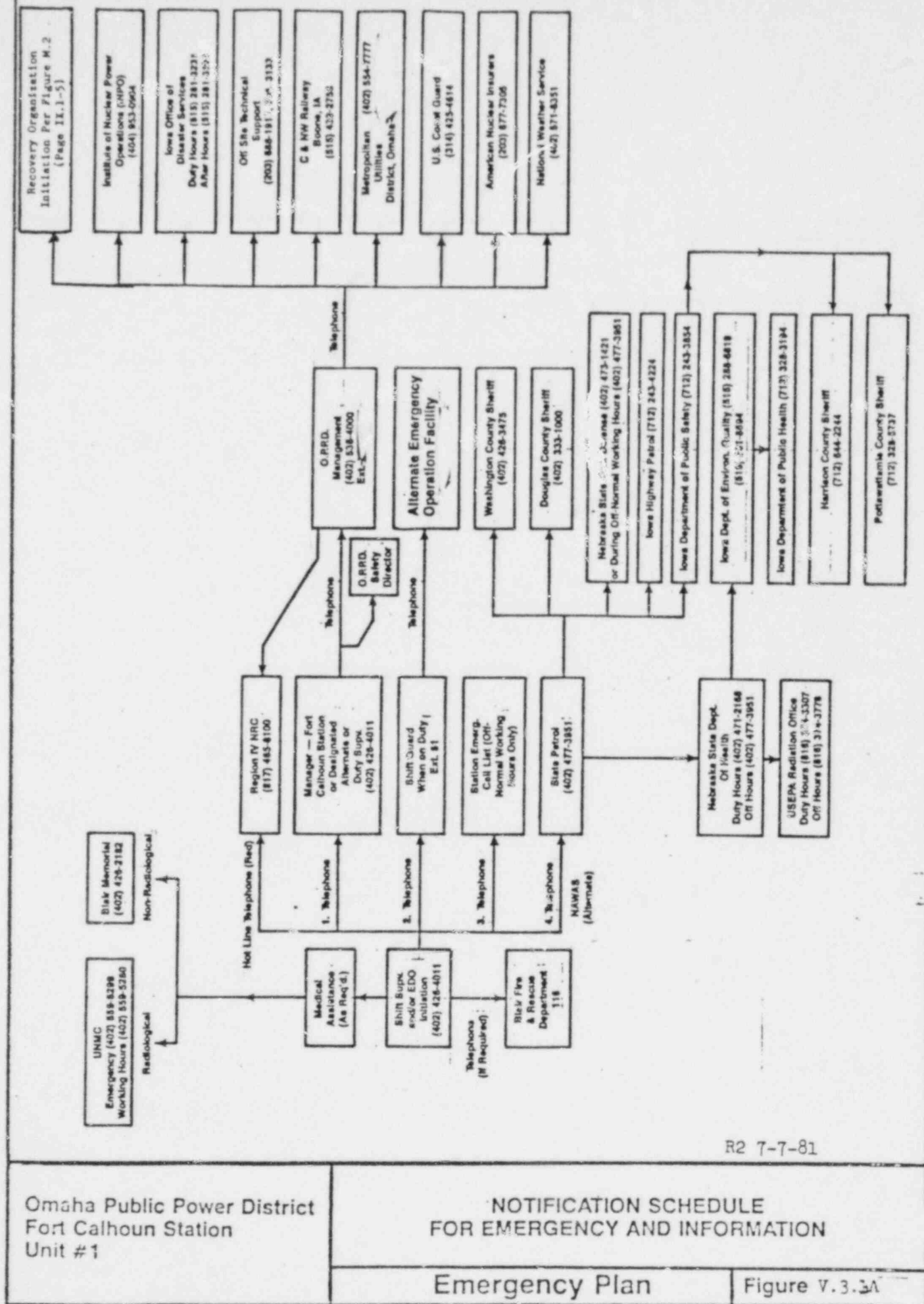
Refer to Section IX, p. IX.1-1 for staffing of the Technical Support Center within the Recovery Organization. The area of expertise of the support personnel reporting to the Technical Support Center may vary dependent on the type of emergency. Staffing personnel normally work at Fort Calhoun Station or District's off-site Technical Services facility.

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3.0 AUGMENTATION OF THE ONSITE EMERGENCY ORGANIZATION

3.1.1.5 (continued)

In the event that the temporary Technical Support Center becomes uninhabitable, the operation of the center would be moved into the control room complex. The area designated in the control room complex is the space connecting the shift supervisor's office to the main control board area. Access to the Technical Support Center by reentry team personnel would then require self contained breathing apparatus. This would be necessary only to obtain specific drawings or information.

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3.0 AUGMENTATION OF THE ONSITE EMERGENCY ORGANIZATION (Continued)

3.1.2 SUPPORT BLOCK DIAGRAMS

COMMUNICATION INTERFACE BETWEEN ONSITE/OFFSITE SUPPORT GROUPS

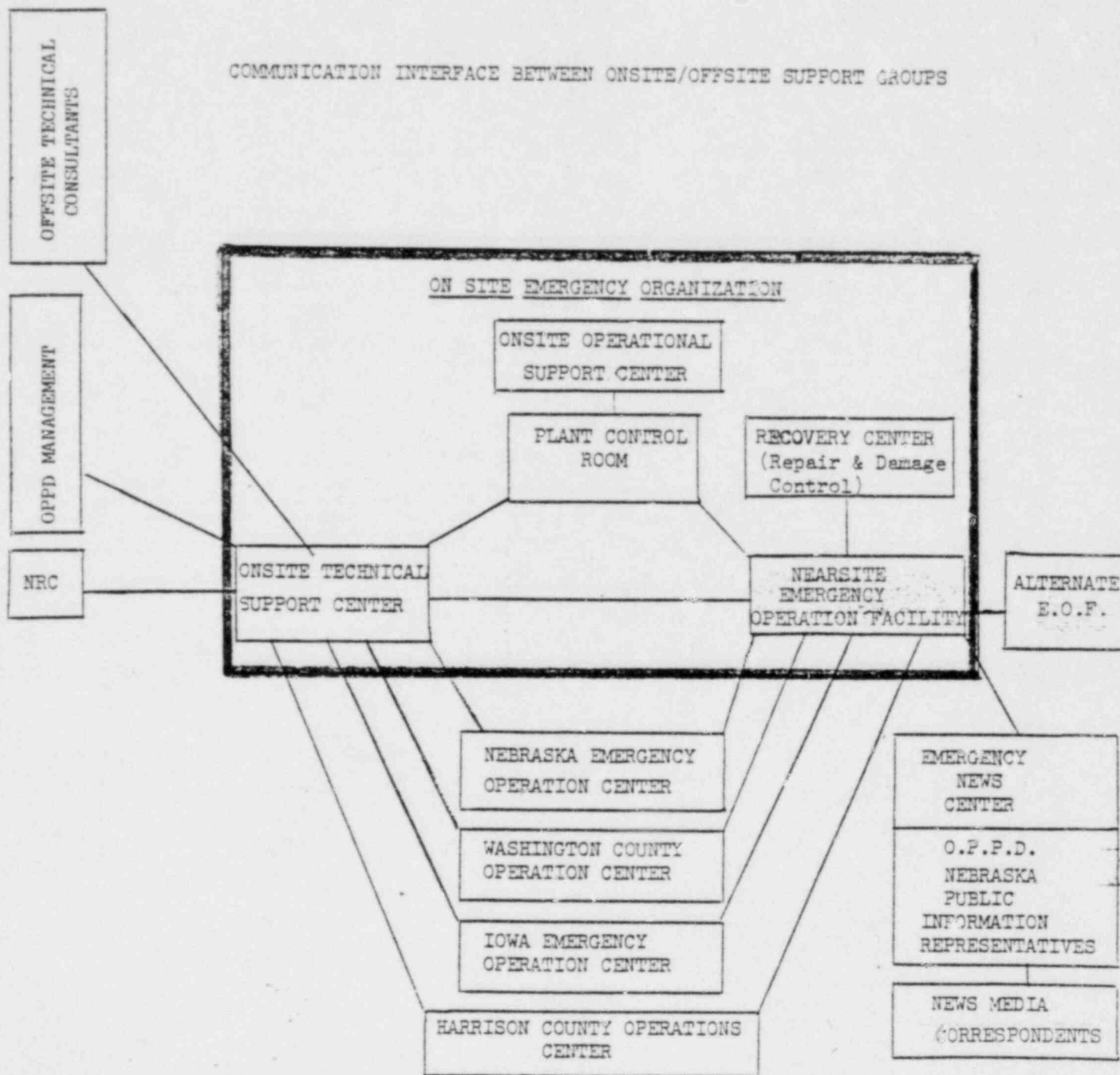


Figure V.3.1B

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O.P.P.D. TECHNICAL SUPPORT CENTER

TSC Manager & Staff

CONSULTANT SERVICE

Gibbs & Hill
 Pickard, Lowe & Garrick
 Combustion Engineering
 Stone & Webster
 Exxon Nuclear
 Southwest Research, Inc.
 INPO

INDUSTRIAL SUPPORT

Chicago & Northwestern Railway
 American Nuclear Insurers
 Eberline Laboratories
 N.P.D. — Cooper Station
 Metropolitan Utilities District

O.P.P.D.
 E.O.F.

O.P.P.D. OPERATION SUPPORT CENTER

Plant Manager & Staff

O.P.P.D. RESOURCES SUPPORT

Recovery Organization

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Omaha Public Power District
 Fort Calhoun Station
 Unit #1

EMERGENCY ORGANIZATION INTERFACE,
 SUPPORT BLOCK DIAGRAM
 (ON-SITE AND CONSULTING AGENCIES)

Emergency Plan

Figure V.3.10-2

STATE OF IOWA

Iowa Office of Disaster Service
Iowa Department of Environmental Quality
Iowa Department of Public Health

IOWA COUNTY GOVERNMENT

Harrison County
Pottawattamie County

FIRE & RESCUE

Blair, Nebraska
Pl. Calhoun, Nebraska
Missouri Valley, Iowa

LAW ENFORCEMENT

NEBRASKA
State Patrol
Washington County Sheriff
Douglas County Sheriff
IOWA
Highway Patrol
Pottawattamie County Sheriff
Harrison County Sheriff

MEDICAL/HOSPITAL

Blair Memorial Community
Hospital
UNMC Regional Radiation
Health Center

FEDERAL AGENCIES

FEMA
NRC
U.S. Coast Guard
U.S. Environmental Protection
Agency
U.S. Department of Energy
U.S. Weather Service

O.P.P.D.
E.O.F.

STATE OF NEBRASKA

Civil Defense Agency
State Health Department

NEBRASKA COUNTY GOVERNMENT

Washington County Civil Defense
Omaha/Douglas County Civil Defense

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Omaha Public Power District
Fort Calhoun Station
Unit #1

EMERGENCY ORGANIZATION INTERFACE,
SUPPORT BLOCK DIAGRAMS
(FEDERAL, STATE, AND LOCAL AGENCIES)

Emergency Plan

Figure V.3.20

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3.0 AUGMENTATION OF THE ONSITE EMERGENCY ORGANIZATION (Continued)

3.1.2 RELEASE OF PUBLIC INFORMATION

3.1.2.1 Production Operations management will immediately inform the Assistant General Manager - Public Affairs or his designee of any emergency action level invoked at the plant and the reason or reasons thereof. Once such notification has been made, release of information to the news media will be coordinated by the OPPD Division Manager - Public Relations.

3.1.2.2 At the "Unusual Event" or "Alert" emergency action levels, a public information specialist will be dispatched to the plant site and will disseminate information to the news media through the Media Relations Department. Telephone contact points for media use will be those numbers distributed to local news organizations for routine use. (Specifically, these are the office and home telephone numbers for the Division Manager - Public Relations and other Media Relations Department personnel.) Any media representatives arriving at the plant site will be restricted from Fort Calhoun Station. The public information specialist will supply media representatives with factual information at a field release center established at the intersection of Highway 73 with the plant access road.

3.1.2.3 During either a "Site Emergency" or "General Emergency", the News Release Center will be activated expeditiously to accommodate the public information responsibilities of state, local and federal agencies

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3.0 AUGMENTATION OF THE ONSITE EMERGENCY ORGANIZATION (Continued)

3.1.2 (Continued)

3.1.2.3 (Continued)

as well as those of the District. The News Release Center is located at the Douglas County Emergency Operation Center in the Omaha/Douglas County Civic Center.

3.1.2.4 During either a "Site Emergency" or "General Emergency", the Assistant General Manager - Public Affairs or his designee will serve as official spokesperson for the Omaha Public Power District. A technical liaison will assist the official spokesperson in nuclear-related information matters. The official spokesperson will also coordinate the timely exchange and release of information with the official spokespersons for federal and state agencies.

3.1.2.5 During either a "Site Emergency" or "General Emergency", a public information specialist and a technical liaison will be assigned to the near-site Emergency Operation Facility and will serve as primary contacts for the District's official spokesperson who will be at the designated News Center.

3.1.2.6 The Public Relations Division will participate with the states of Nebraska and Iowa in the dissemination of educational information to the public related to the following: emergency notification, radiation, plant releases, respiratory protection, sheltering, evacuation and contact

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3.0 AUGMENTATION OF THE ONSITE EMERGENCY ORGANIZATION (Continued)

3.1.2 (Continued)

3.1.2.6 (Continued)

points for additional information. Such information will be distributed in written form at least annually to permanent adult residents within a ten-mile radius of Fort Calhoun Station. A more general distribution will be achieved by posting information in public areas. Media advertisements, utility bill inserts, telephone taped messages, news releases, and public seminars may also be utilized for public education and information.

3.1.2.7 The Public Relations Division will schedule annual seminars to acquaint the local news media with the operation of the Fort Calhoun nuclear plant and its emergency plan, including the public information procedures to be followed in an emergency. The seminars will also provide educational information concerning radiation, radioactive wastes, and other nuclear-related areas deemed appropriate.

3.2 LOCAL SERVICES SUPPORT

3.2.1 COORDINATION WITH OFF-SITE SUPPORT GROUPS

3.2.1.1 Emergency Planning Coordinator

The Supervisor - Chemistry and Radiation Protection is the Emergency Planning Coordinator whose responsibility shall include the coordination of off-site planning efforts. He is also responsible for the development, review, updating and distribution of the Emergency Plan to ensure it remains current.

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3.0 AUGMENTATION OF THE ONSITE EMERGENCY ORGANIZATION (Continued)

3.2 LOCAL SERVICES SUPPORT (Continued)

3.2.1.2 Letters of Agreement

Written agreements are documented with local, State and Federal agencies and medical support facilities describing the major support that will be provided if Fort Calhoun Station declares an emergency condition. These agreements have been developed to ensure that there is a clear understanding of assigned responsibilities and that there will be proper coordination of activities during an emergency. Appendix A contains current letters of agreement with off-site support groups. The agreements shall provide for specific arrangements for exchange of information as diagrammed in Figures V.3.1A and V.3.1B.

3.2.1.3 Qualifications of Off-Site Support Groups

Persons or organizations, not employees of the Omaha Public Power District, may be called upon for specific assistance. The special qualifications of these individuals and agencies are as follows:

3.2.1.3.1 Chicago Operations Office - Nuclear Regulatory Commission

Radiological Emergency Assistance Teams consisting of specialists in radiation safety, medicine and public information.

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3.0 AUGMENTATION OF THE ONSITE EMERGENCY ORGANIZATION (Continued)

3.2 LOCAL SERVICES SUPPORT (Continued)

3.2.1.3.1 (Continued)

R.E.A.T. is supported by instrumentation, communication and supply personnel.

Complete information is contained in Appendix B.3.

3.2.1.3.2 Nebraska State Department of Health

This organization has three field consultants and one administrative consultant for evaluation of radiological health matters.

They provide trained radiological monitors with survey equipment.

Complete information is contained in Appendix B.1 and the Nebraska Emergency Response Plan.

3.2.1.3.3 Nebraska State Patrol

N.S.P. is experienced in providing area control, communications assistance and direct handling of local populations including evacuation assistance.

Complete information is contained in the Nebraska Emergency Response Plan.

3.2.1.3.4 Off-Site Technical Support Organizations

OPPD technical support is provided by personnel identified and described in Section 12.1-1, FSAR. Technical areas

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3.0 AMPLIFICATION OF THE ONSITE EMERGENCY ORGANIZATION (Continued)

3.2 LOCAL SERVICES SUPPORT (Continued)

3.2.1.3.4 (Continued)

of expertise include: reactor engineering and operations, metallurgy and radiation damage, instrumentation and control, mechanical and electrical engineering.

Outside organizations and consultants provide technical competence in chemistry, radiochemistry, radiation safety and other nuclear power plant technology as described in Table 12.1-1, FSAR.

The list of available survey equipment is contained in Appendix F.

3.2.1.3.5 Medical Consultant and Hospitals

An approved physician is readily available at nearby Blair, Nebraska to the Fort Calhoun Station as a General Medical Consultant. The Director of the Regional Radiation Health Center provides expertise and direction for all radiological injuries. Both physicians have attended the United States Nuclear Regulatory Commission Training Seminar on Medical Care and Treatment of Radiation Accidents.

Arrangements for additional medical specialists are made through these

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3.0 AUGMENTATION OF THE ONSITE EMERGENCY ORGANIZATION (Continued)

3.2 LOCAL SERVICES SUPPORT (Continued)

3.2.1.3.5 (Continued)

Medical Consultants on an as needed basis.

The Regional Radiation Health Center is staffed by nuclear medicine physicians and radiologists who also serve as Instructors at the adjoining University of Nebraska School of Medicine.

3.2.1.3.6 Radiation Office of U.S. Environmental Protection Agency

Upon request of the Nebraska State Department of Health, the U.S. E.P.A. will provide trained manpower to assist in reviewing survey data, off-site evaluations and advise on protective actions for the public. They also provide assistance in the collection and analysis of environmental samples.

3.2.1.3.7 Blair Fire Department and Rescue Squad

The Blair Fire Station is located less than four road miles from the Fort Calhoun Station. It is a volunteer organization consisting of 60 men. Twenty-eight members have advanced training and certification in rescue and first aid. The Rescue Squad furnishes transportation for the injured and administers

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3.0 AUGMENTATION OF THE ONSITE EMERGENCY ORGANIZATION (Continued)

3.2 LOCAL SERVICES SUPPORT (Continued)

3.2.1.3.7 (Continued)

first aid enroute to the hospital. Three training meetings are conducted each month. Annually the members are invited to the Fort Calhoun Station site to re-familiarize them with the location and operation of on-site equipment. They also receive radiation protection refresher training during this session.

3.2.1.3.8 Nebraska Civil Defense Agency

The Nebraska Civil Defense Agency consists of an administrative staff and large pool of reserve personnel located throughout the state. Members receive periodic training in monitoring, establishing relocation centers and providing medical, food and lodging arrangements for evacuees. Backup communication support including the National Warning System is also provided by this group. Three aerial monitoring sets are available in the Omaha area and are coordinated through the office of Civil Defense. All state emergency resources have been documented and are cataloged for emergency use through coordination with the State Civil Defense Agency. R2 7-7-81

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3.0 AUGMENTATION OF THE ONSITE EMERGENCY ORGANIZATION (Continued)

3.2 LOCAL SERVICES SUPPORT (Continued)

3.2.1.3.2 Iowa Office of Disaster Services

The Iowa Emergency Plan commits state resources and capabilities for response to all major accidents including incidents at nuclear facilities. The Governor exercises direction and control of emergency operations through the Office of Disaster Services. Local support is fully committed and coordinated with State Emergency functions. Liaison with the State of Nebraska compact ensures effective response and aid for the general public in the interstate plume exposure and ingestion regions. Annex A of the Iowa Emergency Plan designates all emergency functions assignments. The lead role for notification, warning, communication, shelter and damage assessment is delegated to the Iowa Office of Disaster Services. In addition, they provide support in most other emergency functions.

3.2.2 NOTIFICATION OF OFF-SITE SUPPORT GROUPS

- 3.2.2.1 Agreements exist between the Omaha Public Power District and the Nebraska State Patrol, Nebraska

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3.0 AUGMENTATION OF THE ONSITE EMERGENCY ORGANIZATION (Continued)

3.2 LOCAL SERVICES SUPPORT (Continued)

3.2.2.1 (Continued)

State Department of Health, Iowa Department of Disaster Services and U.S. NRC that ensure each organization is notified of emergencies involving the general public in the area of the plant.

- 3.2.2.2 Should plant conditions indicate circumstances which present a potential radiological hazard to the public, O.P.P.D. management and the appropriate governmental agencies shall be immediately notified and requested to provide assistance under an emergency classification.

The Shift Supervisor normally will notify the Plant Manager, who in turn notifies company management at the Omaha, Nebraska office if the incident occurs during office hours. After review of the situation O.P.P.D. management will contact the NRC, as accident conditions warrant.

If the incident occurs at a time when company management cannot be reached, the Shift Supervisor will directly notify the Radiation Duty Officer, Chicago Operations Office-NRC, and/or NRC-OIE via telephone with information that:

- 3.2.2.2.1 An incident has occurred, and at present no radiation hazard exists to the public, or
- 3.2.2.2.2 An emergency situation does exist and immediate assistance is requested.

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3.0 AUGMENTATION OF THE ONSITE EMERGENCY ORGANIZATION (continued)

3.2 LOCAL SERVICES SUPPORT (continued)

3.2.2.2.2 (continued)

In the event of an emergency greater than the "Alert" classification, the Shift Supervisor will notify the Nebraska State Patrol. The Emergency notification and verification is as stated in the Nebraska Radiological Emergency Response Plan for Nuclear Power Plant Incidents, p. 48, Section 7 and Emergency Plan Implementing Procedure (EPIP-OSC-2) Emergency Plan Activation. The primary method utilizes the telephone to the Nebraska State Patrol office in Lincoln, Nebraska. The alternate method of notification utilizes the National Warning System (NAWAS). Verification for telephone notification is by the identification of the badge number of the Patrolman receiving the message. The badge number identification list is a controlled document located in the FCS Control Room, key locker. If in the event immediate non-radiological medical aid is required, the Shift Supervisor will call the Blair Memorial Hospital, Blair, Nebraska. If contamination or a radiation injury exists or additional medical support is required,

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3.0 AUGMENTATION OF THE ONSITE EMERGENCY ORGANIZATION (continued)

3.2 LOCAL SERVICES SUPPORT (continued)

3.2.2.2.2 (continued)

the University of Nebraska Regional Radiation Health Center will be notified from the plant. If a fire occurs either inside or outside the Control Area the Shift Supervisor will call the Blair Fire and Rescue Squad for assistance. The Blair Fire Department can obtain additional assistance through the Tri-Mutual Aid Association consisting of sixteen municipal fire departments, including the large Omaha Fire Department.

3.2.2.3 Figure V.3.1A shows the order in which outside agencies will be notified of any incident at the Fort Calhoun Station which may require their assistance. Verification will be made using the call back method. Table 5.3.2 is a supplemental listing by title and agencies of the principal officials who shall be contacted in the event off-site support assistance is required. Requests for outside assistance will normally be from the state authorities; but, if necessary, this request can be made by the licensee, in accordance with on-site notification procedures.

3.2.2.4 Followup messages, including recommended protective actions, will be issued to off-site authorities

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3.0 AUGMENTATION OF THE ONSITE EMERGENCY ORGANIZATION (Continued)

3.2 LOCAL SERVICES SUPPORT (Continued)

3.2.2.4 (Continued)

from the Emergency Operation Facility. Followup messages should be made using the Emergency Update Format provided in Appendix I whenever possible.

3.2.3 EMERGENCY ACTIONS (OFF-SITE SUPPORT GROUPS)

3.2.3.1 Action by State Patrol

The Nebraska State Patrol will be immediately notified of the Alert, Site or General emergency situation at the Fort Calhoun Station and advised of the areas affected. Upon notification the Nebraska State Patrol will:

3.2.3.1.1 Initiate the emergency notification system established with Nebraska State agencies and agencies of adjoining states. These include the State Department of Health and the State Civil Defense for Nebraska and Iowa.

3.2.3.1.2 Control traffic along highways and entrance roads to the plant site and generally establish access control over areas immediately surrounding the plant site.

3.2.3.1.3 Institute any additional protective measures for the public as deemed necessary by the Emergency Duty Officer, Nebraska State Department of Health

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3.0 AUGMENTATION OF THE ONSITE EMERGENCY ORGANIZATION (Continued)

3.2 LOCAL SERVICES SUPPORT (Continued)

3.2.3.1.3 (Continued)

and the NRC. Extreme actions may require assistance in evacuation of residents in an affected area.

3.2.3.2 Action by USNRC Personnel3.2.3.2.1 Region IV and Bethesda National NRC Districts

Region IV and the Bethesda USNRC offices will be notified of site and general emergencies and abnormal operating conditions via the direct line red phone located in the control room. The OPPD person making this call will normally be a member of the operating shift.

3.2.3.2.2 Chicago Operations Office

The Nuclear Regulatory Commission Chicago Operations Office will be notified of an Alert, Site or General emergency situation at Fort Calhoun Station through the Radiation Officer at the Chicago Operations Office - NRC. Upon notification and confirmation, the NRC will:

- (1) Dispatch a team of radiation safety specialists to assist in the evaluation of the situation and provide

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3.0 AUGMENTATION OF THE ONSITE EMERGENCY ORGANIZATION (Continued)

3.2 LOCAL SERVICES SUPPORT (Continued)

3.2.3.2.2 (Continued)

state and local authorities with special technical guidance.

- (2) Establish contact with Fort Calhoun Station staff and O.P.P.D. management through the Emergency Duty Officer for assistance and consultation.

3.2.3.3 Action by Nebraska State Department of Health

The Nebraska State Department of Health, upon being notified, will respond as follows:

- 3.2.3.3.1 Dispatch radiological health personnel to the plant site.

- 3.2.3.3.2 Contact the Emergency Duty Officer at the Emergency Operation Facility. Evaluate the public health significance of the incident by direct contact with State Survey Teams and the OPPD Plant Health Physicist.

- 3.2.3.3.3 Direct the activities of State field consultants and coordinate State radiological activities so as to complement the Fort Calhoun Station surveillance activities. This action includes participation with off-site survey teams.

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3.0 AUGMENTATION OF THE ONSITE EMERGENCY ORGANIZATION (Continued)

3.2 LOCAL SERVICES SUPPORT (Continued)

3.2.3.3 (Continued)

3.2.3.3.4 Establish liaison with Regional Environmental Protection Agency and State health departments in Iowa and adjoining states.

3.2.3.3.5 Determine the need to initiate protective action for the public and recommend performance.

3.2.3.3.6 Provide public information releases in coordination with the O.P.P.D. and State Public information personnel.

3.2.3.4 Action by Radiation Office of the Environmental Protection Agency

3.2.3.4.1 Provide, upon request of the State Departments of Health, emergency monitoring teams to review survey data, assist in off-site evaluations and advise on protective actions for the public.

3.2.3.4.2 Provide, upon request of the State Departments of Health, assistance in collecting and analyzing environmental samples.

3.2.3.5 Action by Blair Fire Department

Upon recognition that off-site fire fighting personnel and equipment are needed, the Shift Supervisor will call the Blair Fire Department and

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3.0 AUGMENTATION OF THE ONSITE EMERGENCY ORGANIZATION (Continued)

3.2 LOCAL SERVICES SUPPORT (Continued)

3.2.3.5 (Continued)

Rescue Squad. Additional fire fighting support is available from the Blair Fire Department through the Tri-Mutual Aid Association.

3.2.3.6 Action by Medical Support Groups

Appendix C is a listing of medical consultants available to Fort Calhoun Station should their services be required. It is planned that immediate on-site first aid treatment would be given by plant personnel who have received the American Red Cross Multi-Media First Aid Course. Injured persons would then be transported to Blair Memorial Hospital for further treatment. If contamination is suspected or a radiation injury exists, the University of Nebraska Regional Radiation Health Center will be notified and its facilities will be utilized. UNMC facilities will also be used whenever the Blair Memorial Hospital does not have sufficient space.

Transportation service for the injured is available from the Blair Rescue Squad. All members of the Blair Rescue Squad have received the American Red Cross Standard First Aid Course. Plant personnel shall issue gamma pocket dosimeters to the Rescue Squad whenever a contaminated person is being transported. Plant operating personnel will issue

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3.0 AUGMENTATION OF THE ONSITE EMERGENCY ORGANIZATION (continued)

3.2 LOCAL SERVICES SUPPORT (continued)

3.2.3.6 (continued)

dosimeters if Emergency Monitor Teams have not been activated. The Rescue Squad shall retain the dosimeters until the patient has been delivered to the hospital and final survey of the rescue vehicle has been completed. Communication with fixed medical support facilities is accomplished using standard dial type telephone equipment. UNMC Regional Radiation Health Center and Blair Memorial Community Hospital have established telephone lines and numbers which are dedicated for emergency calls only. The Blair Fire Department and Rescue Squad, and other rescue squads, have a dedicated emergency line, which eliminates delays in message transmittals. Rescue squad vehicles are equipped with mobile radios operating on UHF and VHF frequencies. These frequencies provide capability of communication links between the rescue squad, while in transfer, and (1) their base of operations, (2) the hospital and (3) other rescue squads.

3.2.3.7 Action by State Civil Defense

In the event evacuation of area residents is required the State Civil Defense Agency will work

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3.0 AUGMENTATION OF THE ONSITE EMERGENCY ORGANIZATION (continued)

3.2 LOCAL SERVICES SUPPORT (continued)

3.2.3.7 (continued)

with the State Patrol in determining evacuation routes and relocation centers following state plans. They will also make the necessary arrangements for food, lodging and medical care of evacuees.

3.2.3.8 Action by U.S. Coast Guard and U.S. Corps of Engineers

Upon notification, the U.S. Coast Guard, in conjunction with the U.S. Corps of Engineers will control traffic on the Missouri River in the area of Fort Calhoun Station. These agencies will provide waterborne patrols for extended periods if contamination levels persist.

The U.S. Coast Guard cutter Gasconade is based at the Florence Boat Yard, approximately 18 river miles downstream of the Fort Calhoun Station. The U.S. Corps of Engineers has a 25 foot cruiser and a three man air boat which are available as needed.

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<u>Off-Site Agency or Support Groups</u>	<u>Title of Principal Official</u>	<u>Title of Alternate Official</u>	<u>Location</u>	<u>Telephone No.</u>
Blair Rescue Squad	Fire Chief		Blair, Nebr.	Dedicated Line
Blair Memorial- Community . . . Hospital Non-Contaminated Injuries	Hospital Administrator		Blair, Nebr.	
Washington County Sheriff			Blair, Nebr.	Emergency Dedicated Line
Pickard, Lowe and Associates	O.P.P.D. Project Engineer		Washington, D.C.	Normal hrs.
Combustion Engineering, Inc.	O.P.P.D. Project Manager		Windsor, Conn.	
Southwest Research Institute	Director Dept. of Special Engineering Services		San Antonio, Texas	
Gibbs and Hill	Project Engineer		New York, N.Y.	
Chicago & North- western Railway Company	Chief Train Dispatcher		Boone, Iowa	

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Table 5.3.2
Off-Site Support Groups for
Emergency Response

<u>Off-Site Agency or Support Groups</u>	<u>Title of Principal Official</u>	<u>Title of Alternate Official</u>	<u>Location</u>	<u>Telephone No.</u>
Medical-Non Contaminated Injuries	Medical Consultant- Blair Clinic		Blair, Nebr.	
Medical Consultant	Physicians Clinic- Dr. C. E. Wilson		Omaha, Nebr.	
Nebraska State Patrol	(1) National Warning System (NAWAS) (2) Captain-Lincoln Headquarters (3) Captain-Troop A Omaha Office	Duty Patrolman	Lincoln, Nebr. Omaha, Nebr.	
Nebraska State Depart- ment of Health	Director of Health	Director of Radiological Health	Lincoln, Nebr.	Normal hours
Environmental Protection Agency	Chief, Environ- mental Radiation Branch		Kansas City, Missouri	Off-Duty hours (State Patrol)
DOE	Radiological Assistance		Argonne National Laboratories Argonne, Ill.	
USNRC	Director		Office of Inspection & Enforcement Region IV Arlington, Texas 76012	"Operations" Line "Health Physics" Line
Blair Fire Department	Fire Chief		Blair, Nebr.	

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<u>Off-Site Agency or Support Groups</u>	<u>Title of Principal Official</u>	<u>Title of Alternate Official</u>	<u>Location</u>	<u>Telephone No.</u>
Omaha Public Power District	Control Room		Fort Calhoun Station	
Omaha Public Power District	Emergency Operation Facility		Fort Calhoun Station	
Omaha Public Power District	Alternate Emergency Operation Facility		North Omaha Station	
				(Control Room)
				(AEOF)
				(AEOF)
Omaha Public Power District	Emergency Duty Officer		Fort Calhoun Station	
Omaha Public Power District	Assistant General Manager - Public Affairs			
American Nuclear Insurers				
National Weather Service			72nd St. Station	
Weather Advisory Service at Strategic Air Command Headquarters				
Omaha Public Power District	Division Manager - Public Relations			OR

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<u>Off-Site Agency or Support Groups</u>	<u>Title of Principal Official</u>	<u>Title of Alternate Official</u>	<u>Location</u>	<u>Telephone No.</u>
Neb-raska State Civ. l Defense	Radiological Defense Officer		Lincoln, Nebr.	<div>Ext</div> <div>Dedicated Line</div>
Iowa Office of Disaster Services	Director		Des Moines, Iowa (Iowa Highway Communications)	<div>Duty Hrs.</div> <div>After Duty Hrs</div> <div>Dedicated Line</div>
Iowa Dept. of Environmental Quality	DEQ Duty Officer		Des Moines, Iowa	<div>or</div>
Iowa Highway Patrol	Area Commander		Atlantic, Iowa	
UNMC Regional Radiation Health Center	UNMC Regional Radiation Health Center Director	UNMC Regional Radiation Health Center Nuclear Physi- cian	Omaha, Nebr. Safety Office Emergency Number:	
Metropolitan Utilities District	General Office (MUD Dispatcher initiates MUD emergency plan) Dispatcher		Omaha, Nebr.	
U.S. Coast Guard (1) U.S.C.G. Disaster Control Group (2) N.O. Local Ship Office (3) Marine Safety Office			St. Louis, Mo Omaha, Nebr. St. Louis, Mo.	<div>Duty Hours:</div> <div>or</div>

4.0 PROTECTIVE ACTIONS

4.1 Protective Cover, Evacuation, and Personnel Accountability4.1.1 Protection Action Levels and Protective Measures

4.1.1.1 Protective measures are defined in Section 4.1.16 for each potential accident classification discussed in Section IV and protective action levels (predetermined values of appropriately monitored variables requiring implementation of the emergency plan) are also indicated. Protective measures must take into consideration the potential risks of implementing such measures against the reduction of the radiological risk achieved by their use.

4.1.1.2 The Fort Calhoun Station is designed and equipped with a series of safety systems engineered to meet all Part 100 criteria for reactor safety. Omaha Public Power District recognizes that in any accident situation, it would be prudent and logical to make every effort to further reduce and minimize exposure to the public.

4.1.1.3 In furtherance of this principle, the Omaha Public Power District management will recommend to appropriate state and local authorities that protective actions be initiated if any person is expected to receive an emergency exposure in excess of normal occupational limits. Recommendations will originate from the Emergency Operation Facility based upon emergency procedures for determining projected dose to the population-at-risk. The protective action levels and protective measures are established as guidelines

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4.0 PROTECTIVE ACTIONS

4.1 (Continued)

4.1.1 (Continued)

4.1.1.3 (Continued)

with this principle in mind and under no circumstances should exceed the actions provided in Table VI.4.1 (based on the Manual of Protective Action Guides and Protective Actions for Nuclear Incidents, EPA-520/1 - 75 - 001). Recommendations will be made in accordance with agreements with civil authorities using, whenever possible, the message formats provided in Appendix I.

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Table VI.4.1

Table 5.1 Recommended protective actions to reduce whole body and thyroid dose from exposure to a gaseous plume
(Manual of Protective Action Guides and Protective Actions For Nuclear Incidents, EPA-520/1-75-001)

Projected Dose (Rem) to the Population	Recommended Actions(a)	Comments
Whole body <1 Thyroid <5	No planned protective actions. (b) State may issue an advisory to seek shelter and await further instructions. Monitor environmental radiation levels.	Previously recommended protective actions may be reconsidered or terminated.
Whole body 1 to <5 Thyroid 5 to <25	Seek shelter as a minimum. Consider evacuation. Evacuate unless constraints make it impractical. Monitor environmental radiation levels. Control access.	If constraints exist, special consideration should be given for evacuation of children and pregnant women.
Whole body 5 and above Thyroid 25 and above	Conduct mandatory evacuation. Monitor environmental radiation levels and adjust area for mandatory evacuation based on these levels. Control access.	Seeking shelter would be an alternative if evacuation were not immediately possible.
Projected Dose (Rem) to Emergency Team Workers		
Whole body 25 Thyroid 125	Control exposure of emergency team members to these levels except for lifesaving missions. (Appropriate controls for emergency workers, include time limitations, respirators, and stable iodine.)	Although respirators and stable iodine should be used where effective to control dose to emergency team workers, thyroid dose may not be a limiting factor for lifesaving missions.
Whole body 75	Control exposure of emergency team members performing lifesaving missions to this level. (Control of time of exposure will be most effective.)	

(a) These actions are recommended for planning purposes. Protective action decisions at the time of the incident must take existing conditions into consideration.

(b) At the time of the incident, officials may implement low-impact protective actions in keeping with the principle of maintaining radiation exposures as low as reasonably achievable.

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4.1.2 Radioactive Contamination4.1.2.1 Personnel

Controls have been established at the Fort Calhoun Station to ensure that levels of removable contamination outside of the Control Area be maintained at less than 1000 dpm/100 cm² beta-gamma and less than 100 dpm/100 cm² alpha activity. Fixed surface contamination limits are 0.5 mrem/hr measured at 1" from surface. Personnel working practices within the Control Area are controlled by Chemical and Radiation Protection personnel. Radiation Work Permits are required by all personnel working in the Control Area. Specific instructions, precautions and limitations are listed on the work permits. Protective clothing is required to be worn by all individuals entering the Control Area. Individuals leaving the Control Area are monitored for contamination before entering the Uncontrolled Area of the plant. Additionally, personnel are again monitored as they pass through the portal monitor before leaving the Guard Building, thus making it highly unlikely that a contaminated person could leave the site undetected.

4.1.2.2 Potable Water or Food

In order to reduce the possibility of personnel

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4.0 PROTECTIVE ACTIONS

(4.1.2.2 continued)

receiving internal radioactive contamination, eating, drinking, and smoking are forbidden within the Control Area.

4.1.2.3 Equipment

All tools and items of equipment used in the Control Area must be checked for contamination before being taken from the Control Area. If the item is found to be contaminated and decontamination is not practical, the item must remain in the Control Area and may be used there only under the control of Chemical and Radiation Protection personnel.

Equipment and tools will be unconditionally released for use outside of the Control Area only if removable contamination is less than 1000 dpm/100 cm² beta-gamma and 100 dpm/100 cm² alpha activity. Radiation levels must be less than 0.5 mrem/hr at one inch.

4.1.3 Air Activity

4.1.3.1 The quarterly integrated accumulation of radionuclides in the body shall not exceed that which would result from exposure to the maximum permissible concentrations (MPC) of radionuclides in air for occupational exposure as listed in Appendix B, Table I, 10 CFR 20 (520 MPC hours).

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4.1.3.2 In general, exposure to airborne concentrations higher than the MPC's will be avoided, but if exposures are necessary, the wearing of appropriate, properly fitted, respiratory protective equipment shall be required as determined by the Chemical and Radiation Protection Supervisor or the Plant Health Physicist in accordance with NUREG-0041 requirements.

4.1.3.2.1 In all unavoidable cases of personnel exposure to airborne activity, attempts should be made to limit the internal exposure to 1/10 the allowable exposure.

4.1.3.3 The Radiation Monitoring System monitors the airborne gaseous and particulate activity in the Reactor Containment. Additional channels of the Radiation Monitoring System also monitor the gaseous activity in the air ejectors and the main ventilation duct. All channels indicate, record and alarm in the Control Room. This would give early warning of a plant malfunction and warn personnel of increasing radiation activity which might result in a radiation health hazard.

4.1.3.4 Periodic portable air samples are taken in selected areas of operation or work activity areas. Additionally, a constant air monitor is operated in the Auxiliary Building.

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4.1.3.5 Respiratory protective devices may be required in any situation arising from plant operations where an airborne radioactivity condition is potential or existent. In such cases, the air will be monitored and the necessary protective devices specified according to the concentration and type of airborne contaminants present. Every precaution should be taken to keep the air contamination to a minimum through the use of proper ventilation and prior decontamination of equipment or work areas.

4.1.3.6 The following table of airborne concentrations in excess of MPC limits will be used to determine the appropriate type of respiratory protection equipment required:

Type

Half Face Respirator (filter type)	Particulate activity less than 10 times MPC
Full Face and Demand Type Respirator	Particulate activity less than 50 times MPC
Pressure Demand Self Contained Breathing Apparatus	Radioactivity greater than 50 times MPC but less than 10,000 times MPC

- CAUTION: (1) Respirators with mechanical filters provide no protection against gaseous activity. Supplied air respirators must be used in oxygen deficient atmospheres.
- (2) Only pressure demand self-contained breathing apparatus is authorized for rescue operation when airborne activity is unknown.

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4.1.3.7 The following actions are to be taken when stack monitors and/or off-site monitoring teams indicate the listed airborne activity levels. Stack monitor CPM readings are equated to airborne activity levels at the restricted area boundary assuming a wind speed of 10 MPH and ventilation stack exhaust of 80,000 CFM. (Actual high levels of airborne activity in the stack should cause more than one of the radiation monitors to show significant increases in CPM readings.) Evacuation in accordance with the above recommendation would ensure that no person would receive an internal exposure greater than one-half the allowable quarterly dose for radiation workers during the emergency duration.

4.1.4 Radiation Field (External Radiation)

4.1.4.1 It is the policy of the Omaha Public Power District to keep personnel radiation exposure within the NRC and State regulations, and, beyond that, to keep it as low as reasonably achievable. Administrative control procedures are adopted to serve this end. These procedures are generally based on the conditions prevailing during routine plant operation.

4.1.4.2 In order to control personnel exposure, radiation surveys are conducted at regular intervals and in specified areas. Special surveys are conducted to evaluate radiological conditions

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4.0 PROTECTIVE ACTIONS

(4.1.4.2 continued)

arising from situations not covered in any routine survey procedure.

- 4.1.4.3 All surveys are reviewed by the Plant Health Physicist who then recommends physical or procedural measures to be taken to control radiation exposures. The physical measures include such items as shielding, ventilation, respiratory protection and protective clothing. The procedural measures include access control, time limitations and modification of working procedures.
- 4.1.4.4 Additionally, the Area Radiation Monitoring System contains twenty gamma detectors which serve to warn personnel of any increase in radiation at various locations in the plant. All twenty channels indicate, record and alarm in the control room.
- 4.1.4.5 Upon indication of an abnormal radiation field, an investigation will be started immediately to determine the cause of the activity increase or alarm. The area involved would be immediately evacuated and only authorized personnel would be allowed to re-enter. Personnel entering the area to conduct investigations will be supplied with high range monitoring devices and every effort will be made to keep their exposures within the limits of 10 CFR 20.

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- 4.1.4.6 The cause for the increased activity will be determined and isolated if possible. Continued plant operation will depend upon whether acceptable activity levels could be achieved.
- 4.1.4.7 Survey personnel, usually the shift C/RP Technician, will be dispatched to survey the site boundary. The following action is to be taken when off-site monitoring teams report activity levels as listed:

OFF-SITE RADIATION PROTECTIVE ACTIONS

Dose Rate	Expected Duration	Maximum Occupancy Time Before Considering Evacuation
5-10 mrem/hr	> 60 hrs.	30 hrs.
10-25 mrem/hr	> 24 hrs.	12 hrs.
25-50 mrem/hr	> 12 hrs.	6 hrs.
50-75 mrem/hr	> 8 hrs.	4 hrs.
75-100 mrem/hr	> 6 hrs.	3 hrs.
100 mrem/hr	> 1 hr.	Immediate

Protective action in accordance with the above recommendation would ensure that no one receives an exposure greater than one-half the allowable quarterly dose for radiation workers.

- 4.1.4.8 Whole Body and Thyroid emergency doses can be projected from noble gas and radioiodine concentrations plotted on Figures VI.4.1A and VI.4.1B.

Radioprotective rugs will be stored in the control room and the Emergency Operation Facility

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4.0 PROTECTIVE ACTIONS

(4.1.4.8 continued)

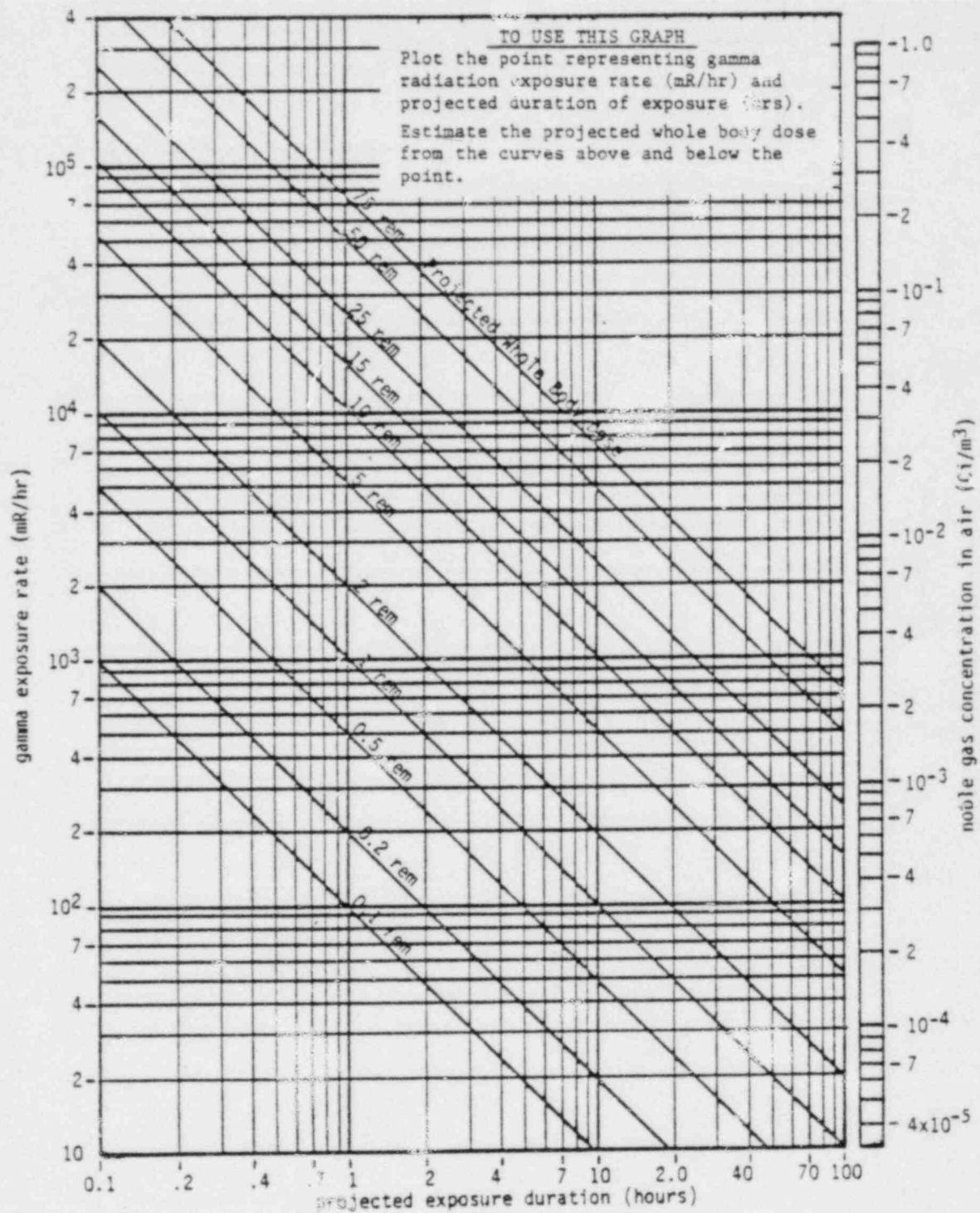
in their respective emergency equipment lockers, and will be available for use. Emergency workers will be informed of this availability and the advantages versus disadvantages of taking the tablet for thyroid blockage.

4.1.4.9 Emergency Off-Site Monitoring

- 4.1.4.9.1 The prime objective of the emergency off-site monitoring group is to rapidly survey areas downwind of the plant site in order to determine the extent and magnitude of any uncontrolled release of radioactive material following an incident. The initial off-site survey is considered to be of great importance; decisions regarding extent and types of protective actions required will be based upon data reported by survey teams. It will be the responsibility of the Emergency Duty Officer to quickly evaluate meteorological conditions existing at the time of the incident and dispatch each monitoring team to a specified downwind location.
- 4.1.4.9.2 The task of each monitoring team is to collect air samples and survey data and transmit information and/or receive instructions from the Emergency Operations

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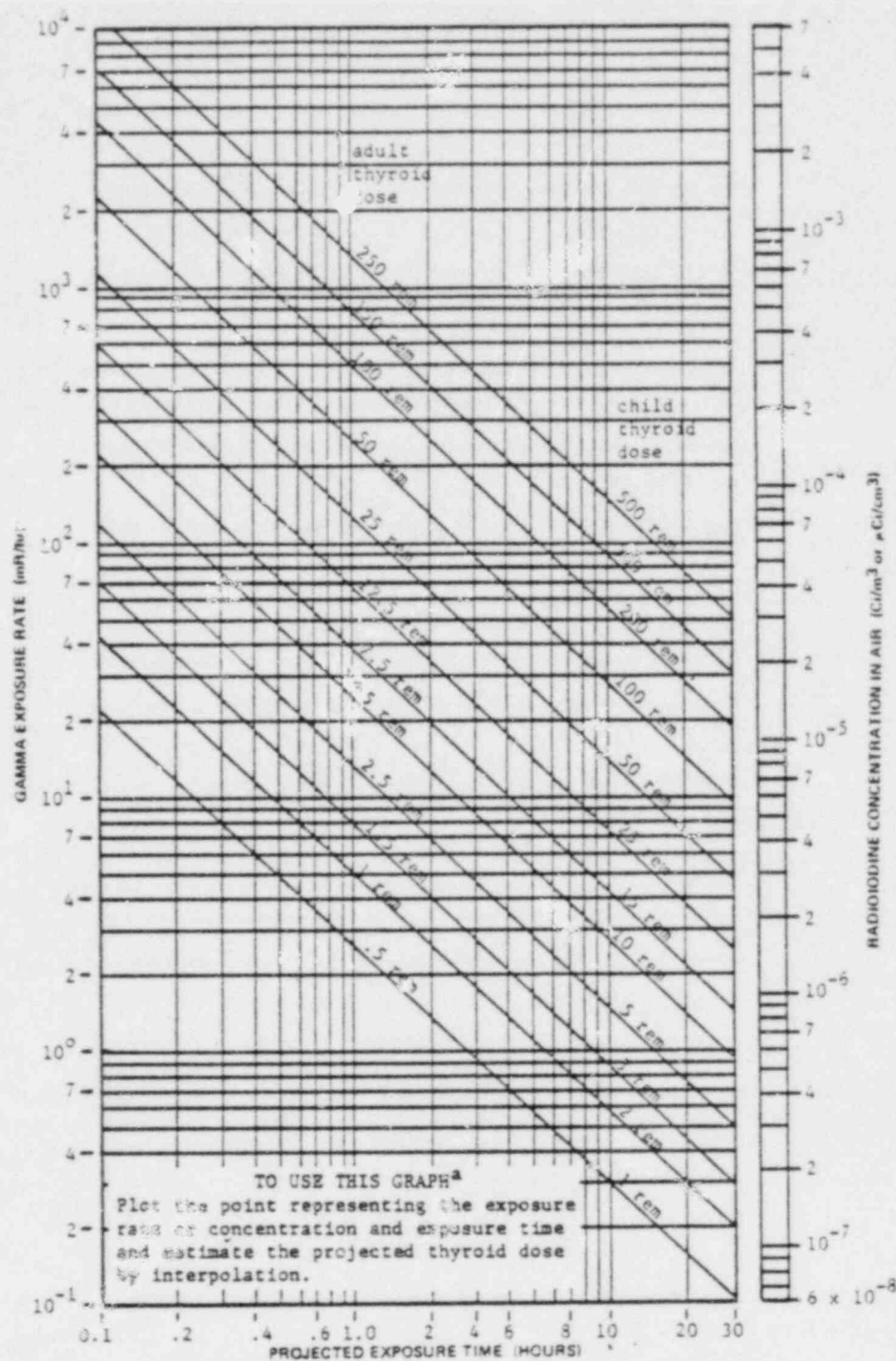


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FIGURE VI.4.1A

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Projected thyroid dose as a function of either gamma exposure rate, or radioiodine concentration in air and the projected exposure time.

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FIGURE VI.4.1B

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(4.1.4.9.2 continued)

Facility. Meteorological overlays, area topographical maps and actual radiation survey data collected by off-site survey teams will be used to rapidly define affected areas, and assess the extent and significance of the release. The overriding consideration in the initial survey is speed. Information is required with as little delay as possible, therefore, the survey consists of simple methods and approximate results with an expected loss of sensitivity. Once the urgency of the post-accident situation has relaxed, subsequent surveys will be made to obtain more accurate information.

4.1.4.10 Emergency On-Site Monitoring

Radiation protection plans and procedures have been established to ensure that personnel radiation exposures are kept within the limits of NRC and State Regulations, and beyond that, to keep exposure to personnel as low as reasonably achievable. A radiation "Control Area" is designated within the plant where radiation or contamination could exist in amounts above the limits set for uncontrolled or clean areas. Access to the Control

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(4.1.4.10 continued)

Area is limited. The basic entry requirements are: (1) wearing of TLD badges; (2) wearing of pencil dosimeter; (3) wearing the appropriate clothing; and (4) authorization in the form of a Radiation Work Permit. Access to and egress from the Control Area is through a Control Point only. All areas within the Control Area are routinely surveyed and posted with the appropriate caution sign and radiation symbol as required. In areas within the Control Area which will require frequent access, contamination levels will be maintained below 1000 dpm/100 m² beta-gamma and 100 dpm/100 cm² alpha. In areas requiring only occasional access, these limits may be increased by a factor of 10-100, except in the case of alpha activity which will always remain less than 100 dpm/100 cm². If these limits are exceeded in the general area, it will be decontaminated. All individuals inside the Fort Calhoun Station Restricted Area are required to wear personnel monitoring devices capable of measuring the dose received from external sources of ionizing radiation or be provided with an escort having such devices. The official and permanent record of accumulated exposure will normally be obtained from a TLD badge. The pencil dosimeter will provide a day to day indication of exposure. A Neutron sensitive Lithium Fluoride

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4.0 PROTECTIVE ACTIONS

(4.1.4.10 continued)

Chip will be incorporated into the beta-gamma TLD badge for individuals entering areas where neutrons have been detected. During emergency conditions, these monitoring procedures are available and utilized.

4.1.5 Radiological Waste Containment/Disposal Accident or Disposal
Under Emergency Accident Conditions

4.1.5.1 When incidents involve the spillage or release of radioactive material or there are personal injuries in incidents involving radioactive materials, the following emergency actions and precautions shall apply:

- (1) Immediately notify the on-duty Shift Supervisor.
- (2) If the incident involves wreckage and a person is believed to be alive and trapped, every effort possible to rescue him shall be made.
- (3) Restrict access to the area involved.
- (4) All individuals directly involved must be monitored for contamination before leaving the area.
- (5) Injured personnel shall be taken to the First Aid Room and given the necessary emergency treatment or prepared for transfer to UNMC Radiation Health Center. If contamination is not present, Blair Memorial Hospital will be used.
- (6) If it is suspected that airborne materials have been released off-site, monitoring teams will be dispatched downwind immediately to evaluate air activity levels.
- (7) River water samples will be collected and analyzed in the event a waterborne discharge of effluent has taken place. Downstream users will be alerted to the release and details provided.

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4.1.6 Fuel Handling Accident

4.1.6.1 In the event a spent fuel assembly is dropped, the following emergency actions and precautions shall be used:

- (1) Immediately notify the on-duty Shift Supervisor.
- (2) If the incident causes local area monitors to alarm, evacuate the area and limit entry to authorized individuals.
- (3) If the incident occurs in the containment, the control room operator will verify that the containment isolation dampers have closed automatically.

OR

If the incident occurs in the auxiliary building, the operator will line up the auxiliary building ventilation system so that air exhausted from the spent fuel pool area passes through a charcoal absorber to remove iodines prior to release to the discharge duct.

- (4) If it is suspected that airborne radioactivity has been released off-site, monitoring teams will be dispatched downwind to evaluate air activity levels.
- (5) Continue emergency procedures as required in this emergency plan.

4.1.7 Fires

4.1.7.1 The material used in the construction of the site is concrete and steel with little or no combustible material used. Periodic checks and "good house-keeping" practices are in effect to ensure that materials do not build up and constitute fire hazards. The Turbine Building, Auxiliary Building and Containment Building have an extensive fire detection system. In addition to the fire

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4.0 PROTECTIVE ACTIONS

(4.1.7.1 continued)

detection system there are hose houses with fire hydrants and dry chemical (Foray) extinguishers located throughout the Restricted Area. A deluge system is installed at the main transformer yard and above the turbine lube oil reservoir. The water that supplies the entire fire fighting complex is from the Missouri River and is pressurized into the system by an electric pump and a backup diesel pump. These two pumps are run weekly to ensure that they are in proper working order. In the unlikely event that a fire does begin in the plant and radioactive materials are involved, it will be fought from the upwind side. Plant personnel will fight all fires and the Shift Supervisor will also call the Blair Fire Department. Fires will be announced over the intra-plant communication system. All persons will be directed to the predetermined fire evacuation area to wait further instructions. The Fire Brigade will man assigned stations. If evacuation is necessary, the fire emergency alarm will be sounded and all persons will proceed to the predetermined evacuation area. If the danger of airborne contamination exists, the off-site and on-site monitoring teams will be directed to begin air samples downwind to evaluate the situation. All data will be made available to the Emergency Duty Officer who will direct all emergency operations.

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(4.1.7.1 continued)

4.1.8 Explosion

4.1.8.1 Hydrogen accumulation in the waste gas decay tank and the gas space of the volume control tank provides the only potentially explosive atmosphere in the Control Area. Air is excluded from these tanks to avoid the accumulation of an explosive mixture. In the case of hydrogen the lower limit is about 4% of gas in air and the upper limit is 75% in air. Periodic quantitative analysis of the contents of the waste gas system will identify the concentration of oxygen and hydrogen and will provide the basis for purging with a non-explosive gas such as nitrogen. Areas where hydrogen is stored or used are posted, prohibiting smoking, open flames or sparks. The Emergency Procedure, "High Radioactivity", would be placed into effect and off-site monitoring teams dispatched downwind in the unlikely event of an explosion in or around the waste gas system components.

4.1.9 Toxic Atmosphere Release Accidents

4.1.9.1 Upon notification from the Blair Fire Department of an accidental ammonia release, the Shift Supervisor will order Control Room ventilation into a recirculation mode. On duty operators should assemble in the Control Room and don supplied air breathing apparatus if ammonia is detected. Irritation to eyes and mucous membranes occurs

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4.0 PROTECTIVE ACTIONS

(4.1.9.1 continued)

at a concentration of 50 parts per million of ammonia.

4.1.10 Major Steam Release

4.1.10.1 Abnormal steam flow incidents are discussed in the Plant Operating Manual, Emergency Procedures. Conditions of abnormal steam flow will cause an automatic reactor and turbine trip, thus terminating the incident.

4.1.11 Personnel Injury

4.1.11.1 The Fort Calhoun Station operates within the Omaha Public Power District Safety Program. This program ensures that all persons conduct their daily activities in a safe manner. The program is actively enforced and a monthly meeting with supervisory persons and regular employees is mandatory. At these meetings any item of safety may be brought up for discussion and a solution. This program helps all persons to improve their safe work practices and serves as constant reminder to maintain an active safety program. If, in the event that an accident takes place in the Control Area, the patient requires medical aid, he will be taken to the Control Point. He will be checked for contamination and if found to be below levels for clean areas, he will be taken to the first aid room for treatment. If additional treatment is necessary, the Shift Supervisor will call the Blair Rescue Squad for

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4.0 PROTECTIVE ACTIONS

(4.1.11.1 continued)

transportation to Blair Memorial Hospital in Blair, Nebraska. If the patient is contaminated to unacceptable levels for uncontrolled areas, reasonable efforts will be made to decontaminate him at the Control Point. If this cannot be done due to the nature of the injury and hospitalization is necessary, he will be placed in clean protective clothing or wrapped in plastic to minimize the spread of contamination. A contaminated patient enclosed emergency carrier is also available on-site. The Shift Supervisor will call the Blair Rescue Squad and a Health Physics trained person will go along with the patient. The Shift Supervisor will also call the UNMC Regional Radiation Health Center and notify them that a contaminated patient is being sent for treatment. When the patient arrives at the hospital, the staff of the hospital will follow the written procedure to handle this type of patient. Chemical and Radiation Protection Personnel will conduct surveys to ensure that contamination levels are kept to a minimum and control contamination until clean-up has been satisfactorily completed.

4.1.12 Natural Disasters

4.1.12.1 Systems and components of the facility, which are essential to the prevention of accidents

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(4.1.12.1 continued)

which could affect the public health and safety or to mitigate their consequences, are designed, fabricated and erected to performance standards that enable the facility to withstand, without loss of the capability to protect the public, the additional forces that might be imposed by natural phenomena such as earthquake, tornadoes, flooding conditions, wind, ice, and other local site effects. The design bases so established reflect appropriate consideration of the most severe natural phenomena that have been recorded for the site and surrounding area and appropriate margin for withstanding forces greater than those recorded to reflect uncertainties about the historical data and their suitability as a basis for design.

4.1.12.1.1 Flooding

The flood peak stage at the site has been determined to be 1009.3 feet mean sea level (msl). Protection of the plant is provided by steel flood gates available near the openings containing equipment required for a safe plant shutdown. In the event of high water levels, these gates can be quickly bolted in place with seals and will provide protection to a level of 1009.5 feet msl.

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4.1.12.1.2 Earthquake

The U.S. Coast and Geodetic Survey (USCGS) reviewed the seismic history of the area surrounding the Fort Calhoun Station and upon the recommendation of the USCGS, structures and systems that are important to the safety of the nuclear plant have been designed to conform with the following criteria:

- (1) Plant to have an elastic response to ground motion acceleration of 0.08 g horizontal and 0.053 g vertical.
- (2) Safe shutdown of the reactor at ground motion acceleration of 0.17 g horizontal and 0.113 g vertical.

4.1.12.1.3 Tornado

The containment, auxiliary building and intake building are Class I structures. Class I structures are designed to ensure that their functional integrity under the most extreme environmental loadings, such as tornado, will not be impaired. In addition, the containment structure is designed to maintain its structural integrity and permit a safe shutdown of the reactor in a tornado with a maximum wind velocity of 500 miles per hour and a concurrent pressure drop of 3 psi

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(4.1.12.1.3 continued)

applied in a period of 3 seconds. Off-site consequences due to tornados, including loss of A.C. power, loss of meteorological equipment, off-site communications, etc., have been analyzed. None result in the failure to safely shutdown the reactor or maintain the plant in a safe condition. Emergency procedures for such consequences list operational correction steps.

4.1.13 Population Distribution

4.1.13.1 Appendix E Maps describe the projected population distribution as of 1980 surrounding the Fort Calhoun Site. The low population zone distance is 3.0 miles and the nearest boundary of a densely populated center containing more than 25,000 residents is 10 miles. (Omaha - 350,000.) The use of meteorological overlays and up-to-date wind speed, direction and variability data provides the Emergency Duty Officer with sufficient information to recommend protective actions of certain sectors. The State governors of Nebraska and Iowa have the legal responsibility of public evacuation, if required. There is reasonable assurance that appropriate protective measures could be taken in the event of a serious accident.

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(4.1.13.1 continued)

State, local and licensee plans include such provisions.

4.1.14 Means for Determining the Magnitude of Releases

4.1.14.1 An overlay has been prepared representing various combinations of past meteorological conditions that have been recorded at the Fort Calhoun Station. Meteorological measurements, specifically the temperature difference, wind speed and direction range are used to determine the surrounding area affected. Rapid evaluation of any downwind area can be made through the use of the overlay. The release rate of radioactive material from the containment can also be calculated to verify the quantity indicated by the monitors. Smoke bombs may also be released to assist in evaluating wind direction. All personnel qualified as Emergency Duty Officers are trained in the use of the map overlays and interpretation of data. Instructions for use of the diffusion overlays are in Section VI.2.A2 and available at each Emergency Operation Facility.

4.1.15 Evacuation Routes and Reassembly Locations4.1.15.1 Plant Personnel

If an emergency requires building evacuation, personnel not involved with the specific emergency duties will proceed to the storeroom area. Shift operating personnel and operational support will

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(4.1.15.1 continued)

report to the main control room and the emergency operations control center. The Emergency Duty Officer will verify through the security badge accountability system that all departments and personnel are accounted for. In the event the site must be evacuated, all required personnel will be instructed by the Emergency Duty Officer to proceed to the alternate Emergency Operation Facility, located in the North Omaha Power Station, at 24th and Craig Streets, in Omaha, by the shortest and safest route, dependent upon weather and traffic conditions. In the event evacuated personnel are not required for emergency duties, they will be surveyed and dismissed from the emergency area.

4.1.15.2 The State Patrol and State Civil Defense Agencies under the direction of State Health Departments, will evacuate residents if required. Evacuation assembly points may depend on the severity of an accident and the prevailing weather conditions. The State Emergency Plans established the evacuation routes and emergency care facilities for the general populace. Appendix E Maps show the main highway arteries within a ten mile radius of the plant site. Preliminary time estimates for evacuation within a ten mile radius are contained in Appendix B.

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4.1.16 Emergency Actions (Fort Calhoun Station)

Upon being notified of an emergency, the on-duty Shift Supervisor shall immediately evaluate conditions and classify the emergency as Unusual Event, Alert, Site, or General Emergency and announce the type and location on the intra-plant Galectronics communications system.

4.1.16.1 Immediate Action (for all classifications of emergencies)

- 4.1.16.1.1 Persons discovering the emergency condition shall immediately notify the control room by the most expeditious means available.
- 4.1.16.1.2 On-duty Shift Supervisor shall announce the location and nature of the emergency on the public address system and sound the alarm, as appropriate.
- 4.1.16.1.3 Control room personnel shall place the plant in a safe condition as the emergency warrants.
- 4.1.16.1.4 The shift H.P. shall report to the Shift Supervisor and provide radiological coverage/surveillance as requested.
- 4.1.16.1.5 Person(s) in the immediate area shall take appropriate action to limit the extent of the incident with available means, if possible, or retreat to a safe location and await assistance and/or direction. If their assistance is not prudent in the immediate area, they will quickly evacuate to the E.O.F.

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4.0 PROTECTIVE ACTIONS

(4.1.16.1.6 continued)

4.1.16.1.6 Shift operating personnel not immediately involved with the emergency will report to the control room to receive instructions and make protective equipment available.

4.1.16.2 Emergency Alert Actions

4.1.16.2.1 The duty Shift Supervisor shall evaluate the potential hazard and determine what actions shall be taken.

4.1.16.2.2 The duty Shift Supervisor shall direct the actions necessary to prevent an accident or mitigate the consequences should one occur.

4.1.16.2.3 The duty Shift Supervisor shall request assistance of additional plant personnel as required.

4.1.16.2.4 The duty Shift Supervisor shall notify the Plant Manager who will notify management personnel.

4.1.16.2.5 The duty Shift Supervisor shall notify proper state authorities as per Figure V.3.1A and update information as plant conditions warrant.

4.1.16.2.6 When emergency conditions no longer exist, the plant will be returned to normal and the proper authorities informed.

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4.1.16.3 Site Emergency Actions

The table below lists the actions and responsibilities of plant personnel during a Site Emergency.

<u>PLANT PERSONNEL</u>	<u>SHIFT SUPERVISOR</u>	<u>EMERGENCY DUTY OFFICER</u>
1. All personnel on-site other than the shift operating crew and the shift H.P. proceed to the Emergency Operation Facility, establish communications with the Control Room and prepare to render assistance.	1. Evaluate the emergency and determine if the incident is causing a release to the site and could result in a general emergency.	1. Proceed to and take charge of the Emergency Operation Facility.
2. Personnel coming to the plant from off-site proceed to the Emergency Operation Facility.	2. Request Emergency Duty Officer to dispatch personnel to the scene of the emergency to evaluate the extent and magnitude of the emergency, determine if radiation hazards are involved and report findings to the control room.	2. Determine if the Emergency Operation Facility is in a safe area through the use of portable survey instruments.
3. Pick up tags from the emergency tag assignment board and perform functions delineated on the tags or as directed by the Emergency Duty Officer.	3. If the emergency occurs at night, verify that no one other than the operating shift is on site by checking personnel access log.	3. Contact control room and request evaluation of plant conditions from Shift Supervisor.
	4. Notify Plant Manager or his designated alternate. Request assistance of additional off-site plant personnel as required.	4. Account for all plant personnel and visitors. Direct plant personnel and visitors not needed for further emergency action to proceed to the OPPE North Omaha Station.
	5. Direct the actions necessary to bring the emergency under control.	5. Direct the survey of all personnel for contamination and possible high radiation exposure.

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4.0 PROTECTIVE ACTIONS

4.1.16.3 continued

EMERGENCY DUTY OFFICER

6. Dispatch monitoring teams to survey site security fence.
7. Provide Shift Supervisor with on-site survey teams or assistance as required.
8. Supervise collection of emergency data in the Emergency Monitoring Log Book.
9. Organize plant personnel present and stand by to provide further assistance to the Shift Supervisor.
10. Ensure Nebraska and Iowa Governor representatives have pertinent data for implementing protective measures off-site.

4.1.16.4 General Emergency Actions

The table below lists the actions and responsibilities of plant personnel during a general emergency:

<u>PLANT PERSONNEL</u>	<u>SHIFT SUPERVISOR</u>	<u>EMERGENCY DUTY OFFICER</u>
1. All personnel on-site other than the shift operating crew and the shift H.P. evacuate to the Emergency Operation Facility.	1. Note the wind direction, instruct on-site personnel (except the normal operating shift) to evacuate to the Emergency Operation Facility; sound the nuclear emergency alarm; and announce the situation a second time.	1. Proceed to and take charge of the Emergency Operation Facility.
2. Establish communications with the control room and prepare to render assistance.	2. Determine conditions causing the general emergency.	2. Determine if the Emergency Operation Facility is in a safe area through the use of portable survey instruments. If not, relocate personnel at the Alternate Emergency Operation Facility.

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4.0 PROTECTIVE ACTIONS

(4.1.16.4 continued)

<u>PLANT PERSONNEL</u>	<u>SHIFT SUPERVISOR</u>	<u>EMERGENCY DUTY OFFICER</u>
3. Personnel coming to the plant from off-site proceed to the Emergency Operation Facility.	3. Initiate actions necessary to limit consequences of the incident.	3. Contact control room and request evaluation of plant conditions and meteorological data from the Shift Supervisor.
4. Pick up tags from the emergency tag assignment board and perform functions delineated on the tags or as directed by the Emergency Duty Officer.	4. Notify the Plant Manager or his designated alternate and request assistance of additional off-site plant personnel.	4. Determine the off-site areas that may be affected by using meteorological data, overlays and area maps.
		5. Dispatch emergency off-site monitoring teams to downwind areas. Specify monitoring area for each team to report by phone or radio at a designated time.
		6. Evaluate monitoring data from survey teams as it becomes available.
		7. Advise company management, State Patrol, Blair Fire Dept., State Dept. of Health, EPA and NRC of off-site radiological conditions as appropriate.
		8. Coordinate emergency operations between OERD assistance groups and governmental agencies.
		9. Account for all plant personnel and visitors.
		10. Direct State Patrol to establish a barricade at the site entrance or as needed to restrict access to the site.

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4.0 PROTECTIVE ACTIONS

(4.1.16.4 continued)

EMERGENCY DUTY OFFICER

11. Direct the survey of all personnel for contamination and possible high radiation exposure.
12. Support the in-plant recovery operation by providing additional assistance, equipment and/or relief personnel as required.
13. Supervise collection of emergency data in the emergency monitoring log.
14. Ensure Nebraska and Iowa Governor representatives have pertinent data for implementing protective measures off-site.

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4.0 PROTECTIVE ACTIONS

4.2 Use of On-Site Protective Equipment and Supplies

The specific procedures for operating various instruments and monitoring devices are included in the Fort Calhoun Radiation Protection Manual. In addition, monitoring team equipment contains specific instructions for its use, operation, and checkout before use. Protective clothing and respiratory equipment are supplied at the control room, EOF, and alternate EOF, in the quantities listed in Appendix F. Additionally large quantities of these materials are warehoused at the Fort Calhoun Storeroom if the need for greater use should arise. All team members and people associated with this equipment and clothing are regularly trained in their use and operation. The Fort Calhoun Station Stores Warehouse is located approximately 300 feet northwest of the Emergency Operation Facility and is the assembly point for plant personnel not assigned specific emergency duties. The recovery personnel are part of this assemblage. In addition to large quantities of radiological equipment storage, the warehouse contains spare parts and supplies for all plant operating systems.

4.3 Contamination Control Measures4.3.1 Plant Site

Contamination Control for personnel, equipment, and site problems is discussed in Section VII.3.2 and decontamination of personnel is discussed in Section VI.5.2. Equipment control is established in Section VI.4.1 and in the Fort Calhoun Radiation Protection Manual.

4.3.2 Offsite Area

Offsite area monitoring and actions taken are covered in Section VII.3.2.

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2.0 COMMUNICATIONS SYSTEMS

2.1 Communications facilities at the plant include the following:

2.1.1 Switched Telephone Service

2.1.1.1 An onsite PABX, equipped with four central office trunks, four intra-company tie trunks, one foreign exchange trunk to Omaha, and 42 telephone lines, provides primary telephone service. Intra-plant and intra-company telephone communication is unaffected by the public telephone network. The central office trunks provide access to the public telephone network. The foreign exchange trunk provides toll free calls to the Omaha area.

2.1.1.2 Local central office telephone lines are installed at various areas of the plant to augment the PABX telephone service.

2.1.1.3 Ten lines tied to the company telephone system are brought into the plant over the company microwave communication system. These lines provide intra-company telephone communication and access to the Omaha area public telephone network.

2.1.2 Radio

2.1.2.1 VHF emergency radio network - provides a voice paging intercom type network between all generating stations and dispatchers. Control points are located in the control room and the EOF.

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2.0 COMMUNICATIONS SYSTEMS (Continued)

2.1 (Continued)

2.1.2 (Continued)

2.1.2.2 Mobile radio system - provides radio communication outside and offsite between mobile radios, portable radios, and control base stations. The mobile radio equipment is itemized in Table VII.2.1.a and operational sketches of the three channel system is shown in Figures VII.2.1.b, VII.2.1.c and VII.2.1.d. The two repeaters serve as backup for each other with some reduction in performance in either case.

2.1.3 Intra-Plant Communication System (Gaitronics)

This provides a voice paging multi-channel intercom system for two way communication at all major plant facilities. Two channels of sound powered communications are installed at critical locations.

2.1.4 Dedicated Telephone Networks

2.1.4.1 Nebraska NAWAS (National Warning System) - A NAWAS terminal is located in the control room.

2.1.4.2 Four-wire intercom network - this provides dedicated wireline communications between all generating stations and dispatchers. All terminal locations are alerted by voice paging. The terminal location is in the control room.

2.1.4.3 Offsite dedicated telephone network - dedicated telephone facilities are provided from the EOF to the state and local Emergency Operation Facilities as shown in Figure VII.2.1.e.

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2.0 COMMUNICATIONS SYSTEMS (Continued)

2.1 (Continued)

2.1.4 (Continued)

2.1.4.4 NRC dedicated telephone networks -

(a) "Operations" line (red telephone sets) -

provides direct communication from the plant to the NRC operations center in Bethesda, Maryland and the NRC Regional Office in Arlington, Texas. Telephone instrument locations in the plant are the control room, shift supervisors office, and plant managers office.

(b) "Health Physics" line (brown telephone sets) - provides direct communication from the plant to NRC Headquarters and the Regional Office for health physics' needs during an emergency. Telephone instrument locations are in the control room, shift supervisors office, and the EOF.

2.2 Communication for notification and verification of unusual events is normally conducted by telephone conversation over the public telephone network. Initial notification and verification for alert and activation of the state emergency response network is relayed through the NAWAS (National Warning System) by coded messages as described in state emergency plans. Follow up communication with state and local governments is performed through the public telephone network, offsite dedicated telephone network, and state communication facilities. These messages will be transmitted using the message formats in Appendix I.

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2.0 COMMUNICATIONS SYSTEMS (Continued)

2.2 (Continued)

After the Nebraska Field Command Post is established near the EOF, the Command Post and EOF are linked by state mobile radio units, a dedicated telephone circuit, and personal contact. Company offsite monitor teams use the mobile radio system for communication with the EOF.

2.3 Records

It is extremely important that complete and accurate records are maintained from the onset of the initial emergency through the recovery and re-entry phases. Radiation levels, contamination levels and air activity values both on and off-site are entered in the Emergency Log. This Emergency Log is contained in the Emergency Operation Facility Kit and tag number (1) on the Emergency Assignment Boards has the responsibility for maintaining the log. Entries should be complete and factual, stating areas affected, levels encountered, personnel involved, corrective action taken, etc.

In addition, all E.O.F. messages are documented on serialized forms and distributed to State and licensee emergency officials at the E.O.F. to ensure data accuracy. Message records for emergencies shall be permanently retained. Message records will be collected by the Plant Staff and transferred to QA for storage in the QA vault.

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EMERGENCY STATUS BOARD

TIME OF EMERGENCY		/	
CLASSIFICATION OF EMERGENCY			
PLANT CONDITION			
EDO IN CHARGE			
SHIFT SUPERVISOR			
PERSONNEL CASUALTY	YES/NO	NUMBER	
TYPE			
RADIOACTIVE RELEASE	YES/NO		
TYPE AND EXTENT			
RADIATION LEVELS: AUX BLDG.			
ECC			
OTHER			

PERSONNEL STATUS

UNACCOUNTED FOR:			
INJURIES:	TYPE	LOCATION	PROG. ESC. R.F.
NAME			
NAME			
NAME			
NAME			

RESCUE SQUAD		OFF-SITE TEAM #1	
TIME NOTIFIED			
TIME ARRIVED			
MONITOR			
RE-ENTRY TEAM			
NAME	NAME	NAME	NAME
Time re-entry		Time Dispatched	
LOCATION		LOCATION	
TIME RETURN		TIME RETURN	
REPORT		REPORT	
OFF-SITE TEAM #2			

ON-SITE TEAM #1		NAME		NAME		NAME	
Time Dispatched		Time Dispatched		Time Dispatched		Time Dispatched	
LOCATION		LOCATION		LOCATION		LOCATION	
TIME RETURN		TIME RETURN		TIME RETURN		TIME RETURN	
REPORT		REPORT		REPORT		REPORT	
GATE MONITOR TEAM							

ON-SITE TEAM #2

NAME	NAME	NAME	NAME
Time Dispatched		Time Dispatched	
LOCATION		LOCATION	
TIME RETURN		TIME RETURN	
REPORT		REPORT	
PERSONNEL DECON TEAM			
NAME			
NAME			
NAME			
NAME			
REMARKS:			

EMERG-VII.2-5

FIGURE VII.2

TABLE VII.2.1.a

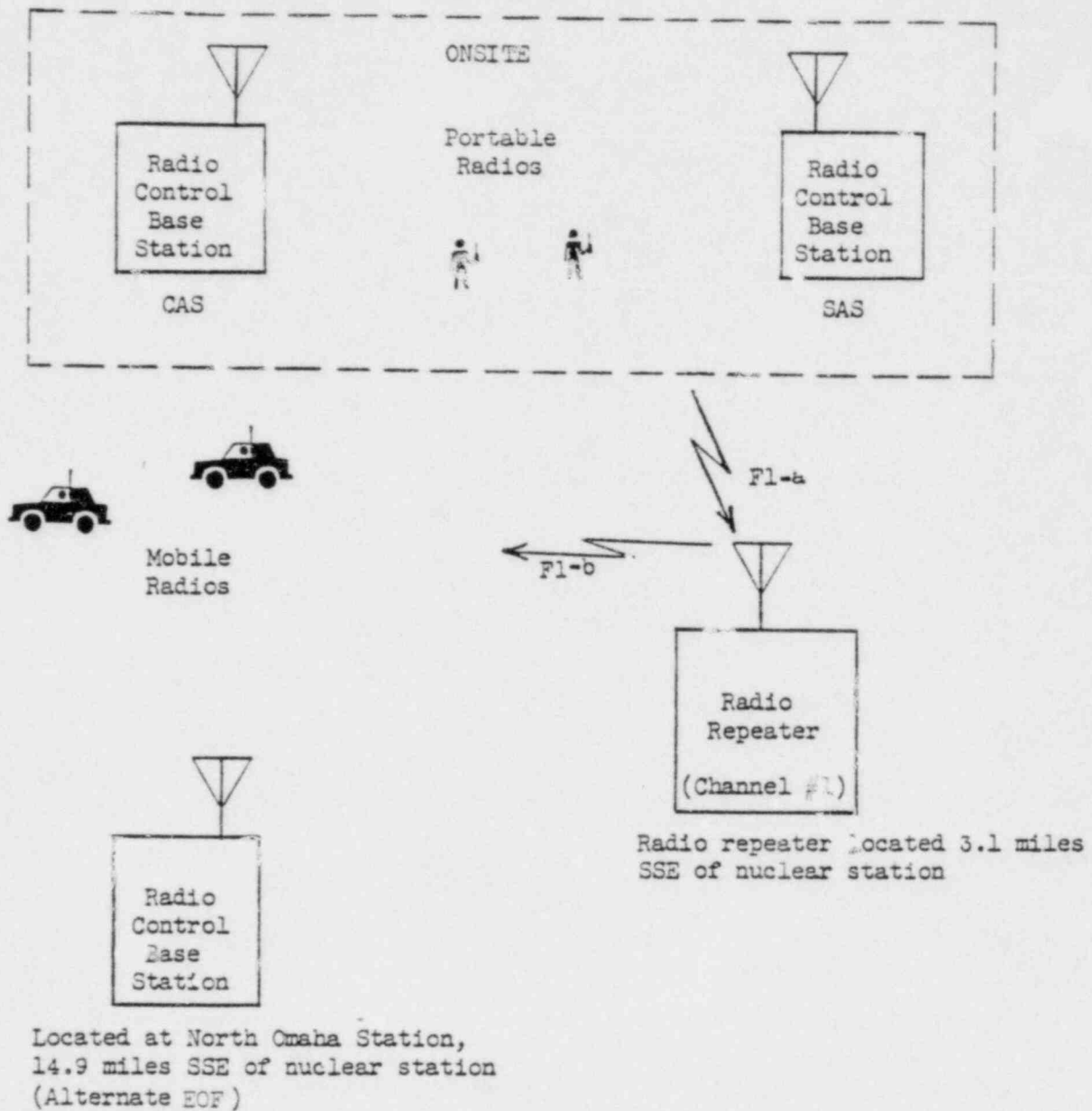
MOBILE RADIO EQUIPMENT

<u>Quantity</u>	<u>Description</u>	<u>Use</u>	<u>Location</u>
1	Radio Repeater - Channel #1	Offsite radio communication	3.1 miles SSE Of nuclear station
1	Radio Repeater - Channel #2	Onsite/security radio communication	Onsite, near Security Bldg.
3	Radio Control Base Station Equipped With Channels #1&2	Fixed radio locations	Security Bldg(CAS) Control Room(SAS) North Omaha Pwr Station(AEOP)
1	Porta-Mobile Radio Unit (Lunch Box Type) Equipped With Channels #1,2,3	Radio communication with offsite monitors, control room, AEOP, and security force	EOP
4	Mobile Radio Unit Equipped With Channels #1,2,3	Radio communication for offsite monitor teams and for site evacuation	15 mile radius of nuclear station
10	Handheld Portable Radio Equipped With Channels #1,2,3	Security force, fire protection, and backup for offsite monitor teams	Onsite, up to 10 mile radius of nuclear station

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CHANNEL #1 MOBILE RADIO SYSTEM DIAGRAM

All channel switches set at Channel #1. All radio transmissions are received by the repeater, converted in frequency, and retransmitted to all receivers.

CAS : Central Alarm Station, located in security building

SAS : Secondary Alarm Station, located in control room

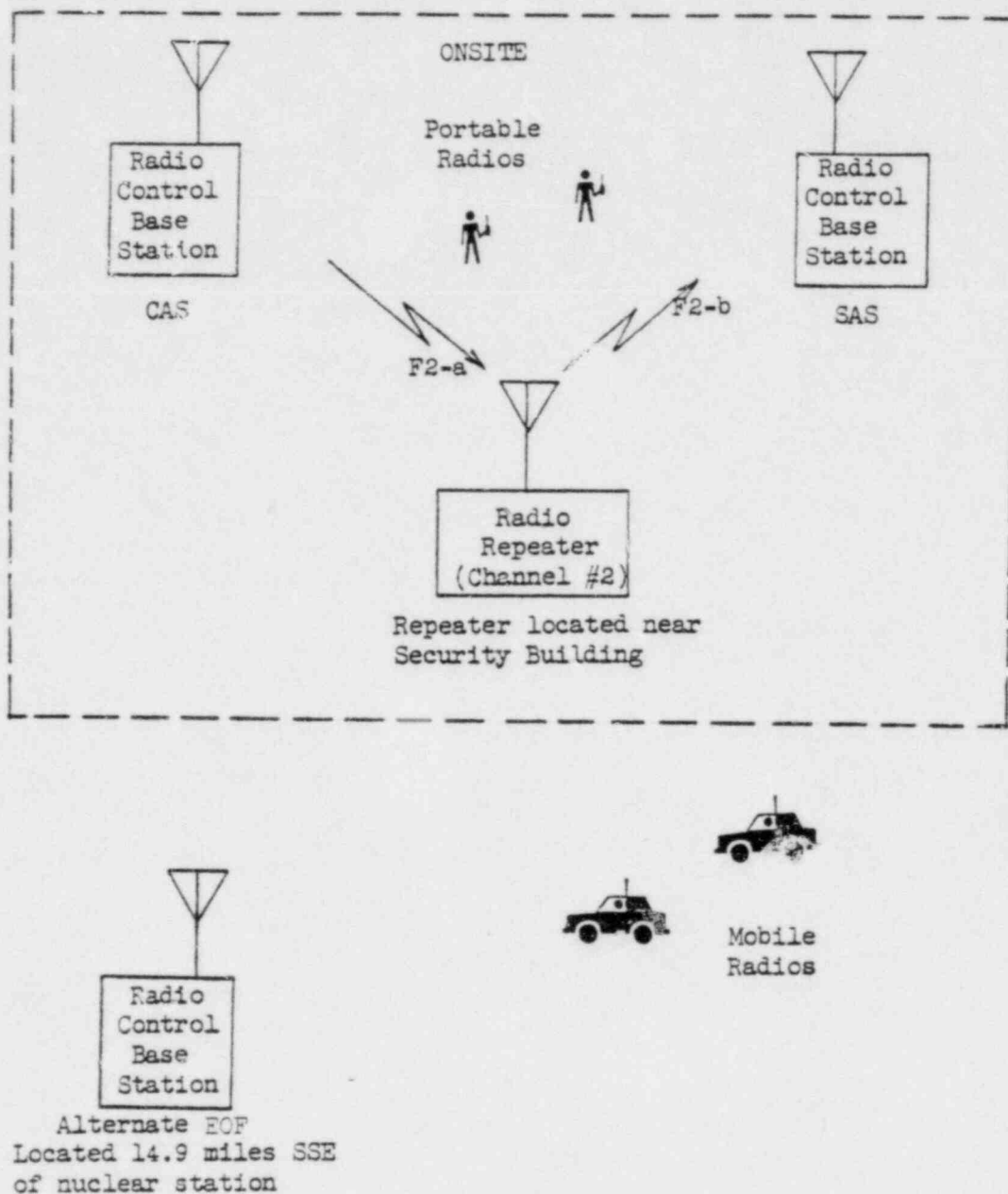
F1-a : Channel #1 radio repeater receive frequency

F1-b : Channel #1 radio repeater transmit frequency

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CHANNEL #2 MOBILE RADIO SYSTEM DIAGRAM

All channel switches set at Channel #2. All radio transmissions are received by the repeater, converted in frequency, and retransmitted to all receivers.

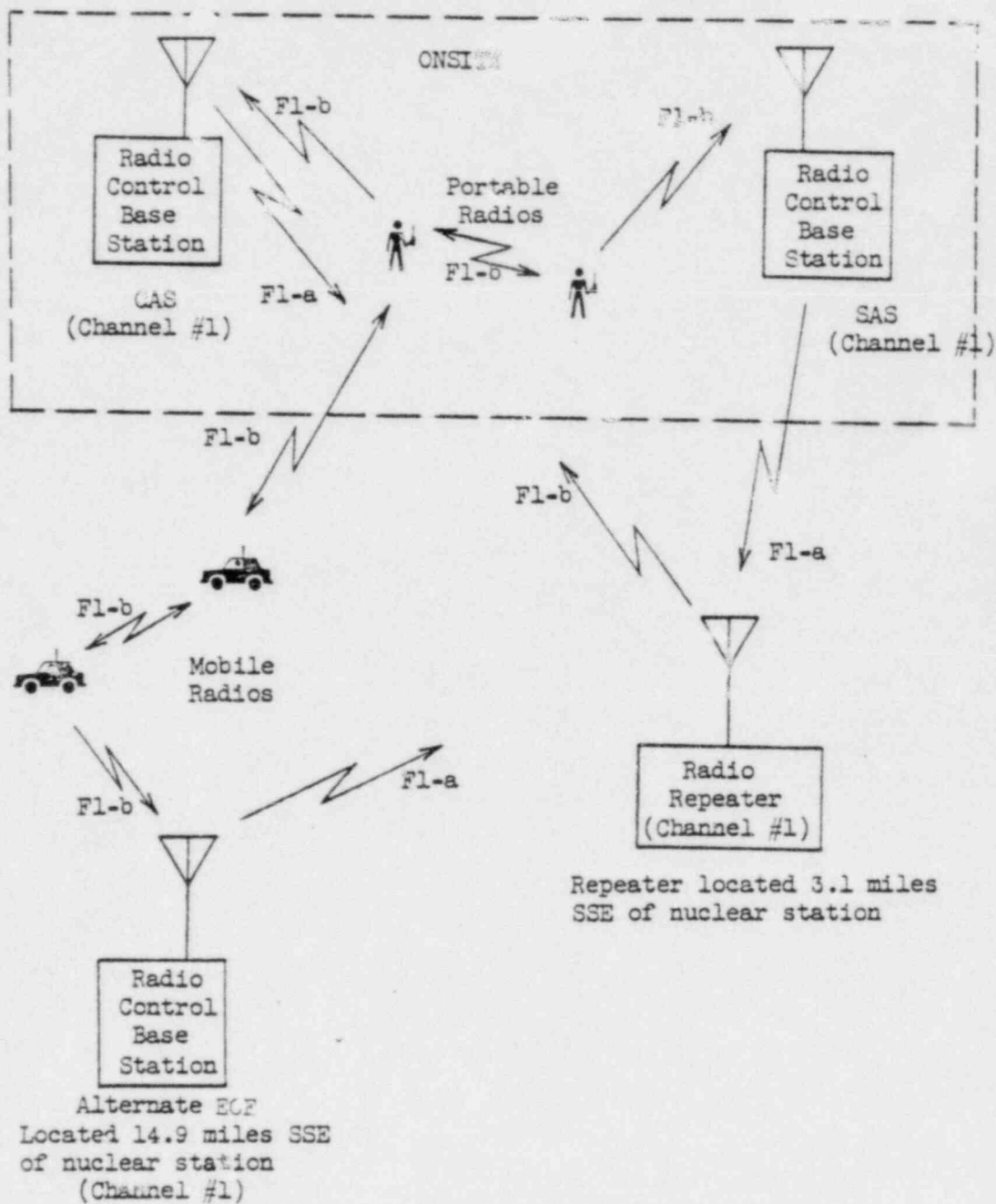
F2-a : Channel #2 radio repeater receive frequency

F2-b : Channel #2 radio repeater transmit frequency

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CHANNEL #3 MOBILE RADIO SYSTEM DIAGRAM

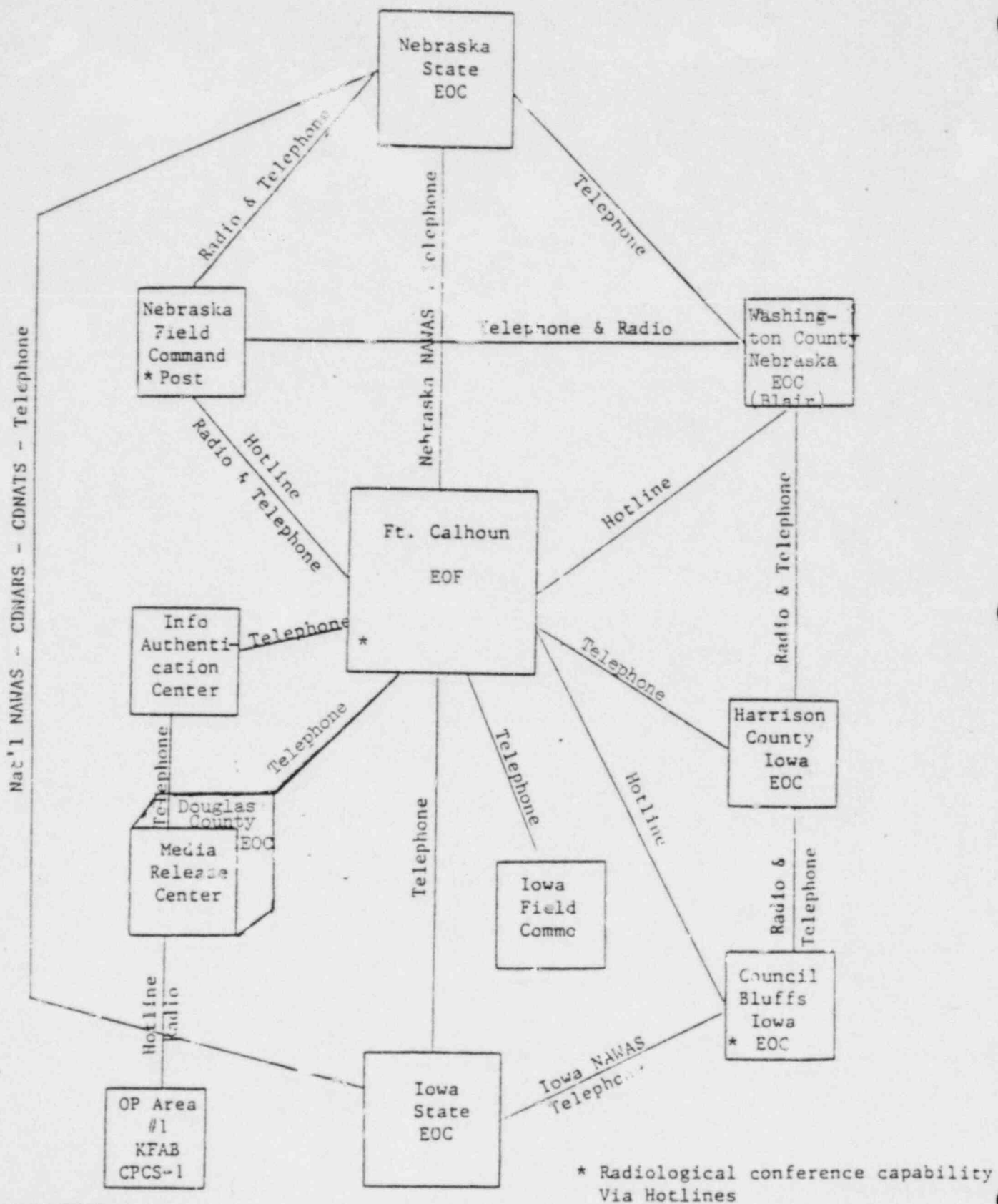
Channel switches set at Channel #3 except control base stations set at Channel #1.

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OPPD/STATE/LOCAL COMMUNICATIONS INTERFACE

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3.0 ASSESSMENT FACILITIES

3.1 ONSITE SYSTEMS AND EQUIPMENT

3.1.1 Personnel Monitoring Equipment On-Site

3.1.1.1 Appendix F lists the type and location of most equipment used for personnel monitoring.

3.1.1.2 Personnel exposures are also monitored through the use of TLD badges and pocket dosimeters.

3.1.2 Basis for Initiating Protective Actions (Instrumentation)

3.1.2.1 The instrumentation and control system monitors provide indication and recording, and automatically regulate all variables necessary for the safe and orderly operation of the plant. These systems provide the operator with all information and controls needed to start up, operate at power, and shut down the plant. They further provide means to cope with all abnormal operating conditions. Plant control and display of information from these various systems are centralized in the main control room at locations convenient to the operator. This instrumentation would provide the basis for initiation of protective action.

3.1.2.2 Fort Calhoun Station has an extensive system for monitoring radioactivity within the containment, at the stack, at the condenser air ejector, in

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3.0 ASSESSMENT FACILITIES

3.1 ONSITE SYSTEMS AND EQUIPMENT

3.1.2.2 (Continued)

the steam generator blowdown system, and in the component cooling water system, in the raw water system, and in the effluent from the liquid waste system. Area monitors are located inside and outside the containment which are effective in radiation fields up to 10^7 mr/hr. All channels of this Radiation Monitoring System indicate, record and alarm in the control room. Portable monitors are also available. These various provisions will adequately allow for monitoring activity releases during any credible accident condition.

3.1.2.2.1 Plant personnel are trained for gathering information needed to decide what action should be taken in the event of a serious radiation incident. In addition to the built-in plant instrumentation, portable emergency instrumentation is maintained and stored in the Emergency Operation Facility.

3.1.2.3 The plant has a permanent 110M meteorological tower with redundant power supply, instrumentation and modes of data output. Through the use of redundancy and a Quality Assurance Program, a minimum of 90% data recovery is normally achieved.

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3.0 ASSESSMENT FACILITIES

3.1 ONSITE SYSTEMS AND EQUIPMENT

3.1.2.3 (Continued)

The available instrumentation and the level of redundancy are indicated in Table VII.3.1.

Historical data may be accessed by use of magnetic tape which records 1 minute scan values from all instruments. Historical data is also available from the computer log located in the control room where hourly and 24 hour average data is available. Real-time data is available from the plant computer by calling up the computer addresses specified in Table VI.2.3B. Also available from gauges on the north wall of the control room is real-time wind speed and direction from the 10M, 10M (redundant), or 110M tower levels as well as the three redundant ΔT 's (110M-10M).

3.1.2.4 Backup wind speed and direction data can also be obtained from the U. S. Weather Bureau. The most useful data to request by telephone communication (dedicated National Warning System (N.A.W.A.S.) line from the control room or telephone call) is from the Eppley Airfield site in Omaha, approximately 20 miles southeast of the plant. This tower as well as the Fort Calhoun tower are located on the floor of the river valley and will provide data with the highest correlation to the site. If Eppley data is not available, data from the National Weather Service, approximately

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3.0 ASSESSMENT FACILITIES

3.1 ONSITE SYSTEMS AND EQUIPMENT

3.1.2.4 (Continued)

15 miles south of the plant or the Weather Advisory Service at Strategic Air Command can be substituted.

3.1.3 Evaluation of Request for Outside Assistance

3.1.3.1 The Shift Supervisor (in charge) will promptly determine the magnitude or severity of the incident by referring to the reactor plant instrumentation and the Containment and/or Auxiliary Building Area Monitor Panel.

3.1.3.2 Information provided by the area and process radiation monitoring system will serve as a basis for evaluation of the accident.

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Table VII.3.1

Fort Calhoun 110 Meter Tower Instruments

Meteorological Instrument (or Parameter)	Manufacturer	Instrument Model	Sensor Elevation (Ft. Above Ground Level)	Instrument Quantity	Sensor Specifications
Wind Direction	Climatronics	F460	1365.9 (@ 110M) 1152.6 (@ 45M) 1037.8 (@ 10M)	1 1 2	Azimuth 0-540° Starting Threshold .9 mph ACC + 5° Damping Ratio .6 Delay Distance 4 ft.
Wind Speed	Climatronics	F460	1365.9 (@ 110M) 1152.6 (@ 45M) 1037.8 (@ 10M)	1 1 2	Speed Range 0-100 mph Starting Threshold .9 mph ACC + .5 mph Response Distance 8 ft.
Ambient Temp.	Climatronics	TS-10	1037.8 (@ 10M)	3	Range -50°C to +50°C ACC + .1°C
Delta Temp.	Climatronics	Temp/ΔTemp P/N-100088-2 YSI-703	1037.8-1365.9 (@ 110M-10M)	3	Range -5°C to +15°C ACC + .1°C
Sigma Azimuth	Climatronics	Sigma Computer P/N-100168	1365.9 (@ 110M) 1037.8 (@ 10M)	1 2	Azimuth Range 0-100° Resolution 1° ACC + 1°
Data Logger	Easterline Angus	PD-2064	Ground	1	20 Channels Crystal Controlled
Magnetic Tape Recorder	Kennedy	1600/360	Ground	1	800 BPI/IBM 9 Trace Compatible

3.0 ASSESSMENT FACILITIES (continued)

3.2 FACILITIES AND EQUIPMENT FOR OFFSITE MONITORING

3.2.1 Spectrum of Potential Accidents

The Fort Calhoun Station Emergency Plan considers the consequences of potential radiological accidents ranging from accidents affecting only Fort Calhoun Station employees within the site boundary to unlikely major releases of radioactivity which could affect members of the public off-site. Potential accidents which are not unique to a nuclear power station are included since they may be complicated when associated with a potential radiological hazard. Available plant instrumentation will be used as the basis for initiating protective actions discussed previously.

The consequences of the various potential accidents associated with the operation of a nuclear power plant are considered and discussed below:

3.2.1.1 Radioactive Contamination3.2.1.1.1 Personnel

Radiological plans and procedures have been established at the Fort Calhoun Station to ensure that levels of radioactive contamination are maintained as low as practical at all times.

Personnel working in contaminated areas are carefully controlled by Chemical and Radiation Protection

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3.0 ASSESSMENT FACILITIES (continued)

3.2.1.1.1 (continued)

personnel.

To preclude contaminated personnel from carrying contamination from the Control Area to other on-site areas, all personnel leaving the Control Area are monitored for radioactive contamination.

In the event a person alarms the portal monitor, the source and the reason of contamination will be determined and controlled. Articles of clothing or equipment will be determined and controlled. Articles of clothing or equipment will be collected or decontamination accomplished as appropriate.

The use of these monitoring devices eliminates the possibility of any person leaving the plant site with radioactive contamination above limits and, therefore, there would be no off-site consequences.

3.2.1.1.2 Potable Water and/or Food

Potable water for on-site use is obtained from the Missouri River. Any airborne release of radioactive materials could affect this supply.

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3.0 ASSESSMENT FACILITIES (continued)

3.2.1.1.2 (continued)

Potable water will be analyzed for gross radioactivity.

Residents in the area of the Fort Calhoun Station receive their water supplies from covered wells. Selected offsite wells are analyzed for radioactivity as part of the Fort Calhoun Station Environmental Radioactivity Surveillance Program. In addition, surface water samples from the Missouri River upstream and downstream of the plant discharge and at the intake to the municipal water supplies at Omaha, Nebraska and Council Bluffs, Iowa are analyzed for gross activity. Vegetation and milk samples are analyzed as part of the Environmental Surveillance Program and could be affected by an off-site release. In event of such a release, samples will be collected and analyzed. Results shall be provided to the Nebraska State Health Department for appropriate protective action.

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3.0 ASSESSMENT FACILITIES (continued)

3.2.1.1.3 Equipment

Any item of equipment, once having been taken inside the Radiation Control Area, requires a radiation survey and a smear survey for contamination prior to removal from the Control Area.

Equipment will be released from the Control Area only if the levels of contamination are within the limits of the Uncontrolled Area.

Due to the rigid radiological controls, it is highly unlikely that a piece of contaminated equipment will inadvertently be taken off-site.

3.2.1.2 Air Activity

3.2.1.2.1 The safety of the public and station operating personnel and reliability of plant equipment and systems have been the primary considerations in the plant design. The approach taken in fulfilling the safety considerations is three-fold. First, careful attention has been given to the design so as to prevent the release of radioactivity to the environment under conditions which could

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3.0 ASSESSMENT FACILITIES (continued)

3.2.1.2.1 (continued)

be hazardous to the health and safety of the public. Second, the plant has been designed so as to provide adequate protection for plant personnel wherever a potential radiation hazard exists. Third, reactor systems and controls have been designed with a great degree of redundancy and fail-safe characteristics.

3.2.1.2.2 The inherent design of the pressurized water reactor insures that significant quantities of fission products cannot be released to the atmosphere. Four barriers exist between the fission product accumulation and the environment. These are the uranium dioxide fuel matrix, the Zircaloy fuel cladding, the reactor vessel and reactor coolant loops, and the reactor containment. The consequences of a breach of the fuel cladding are greatly reduced by the ability of the uranium dioxide lattice to retain fission products.

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3.0 ASSESSMENT FACILITIES (continued)

3.2.1.2.2 (continued)

Escape of fission products through a fuel cladding defect would be contained within the pressure vessel, loops and auxiliary systems. Breach of these systems or equipment would release the fission products to the reactor containment where they would be retained. The reactor containment is designed to adequately retain these fission products under the most severe analyzed accident conditions, the hypothetical accident. Even in the hypothetical case there would be no injury to personnel or to the public.

3.2.1.2.3 Safeguard systems which have been included in the reactor containment design are an air recirculation system which would effect a rapid depressurization of the containment following a loss of coolant and provide for iodine removal if fission products are released from the core and a containment spray system which could depressurize the containment and remove elemental iodine from the atmosphere by a washing action.

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3.0 ASSESSMENT FACILITIES (continued)

3.2.1.2.3 (continued)

Continued plant operation would depend upon the severity of the leak and whether acceptable activity levels could be achieved.

3.2.1.2.4 In the event of a reactor coolant leak across a steam generator tube sheet, the extent of radioactive carryover would be determined and, if conditions warrant, blowdown would be diverted to the radioactive liquid waste disposal system or terminated. The severity of the leak may require the plant load to be reduced or the plant to be shut-down.

3.2.1.2.5 Should a release of airborne radioactivity occur in the Auxiliary Building, it would pass through the Radiation Monitoring System (RMS), before exhausting via the ventilation air duct. Upon detecting high airborne activity, the RMS would alarm in the Control Room. On duty shift operating personnel would then take the necessary action to secure the ventilation and evacuate unnecessary

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3.0 ASSESSMENT FACILITIES (continued)

3.2.1.2.5 (continued)

personnel from the building until the cause of the high airborne activity could be determined and corrective action taken.

3.2.1.2.6 If it is suspected that high airborne activity has been released off-site, monitoring teams equipped with air samplers will be dispatched downwind to follow the passage of airborne activity. The general public will be evacuated from the affected areas should conditions warrant.

3.2.1.2.7 An environmental monitoring program has been in effect since the pre-operational stage (1968). The operational on-site and off-site monitoring stations are primarily a continuance of those locations and readily indicate any radiological increases in the environs. Samples are routinely collected. A description of sample location and media is shown in Table VII.3.2 and Figures VII.3.1 through VII.3.3.

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3.0 ASSESSMENT FACILITIES (continued)

3.2.1.2.7 (continued)

In the event of an emergency, the permanent air particulate stations are first utilized for immediate data, concerning airborne releases. Background radiation stations provide short term exposure data and are periodically replaced. TLD input can be increased during the longer term as the District manages an in house Harshaw 2271 automatic system at Staff Service. The Environmental laboratory personnel perform accelerated collection and analysis of listed samples as their primary responsibility under emergency duties.

3.2.1.3 Radiation Field (External Radiation)

3.2.1.3.1 Radiation levels at the plant site may be detected by the Radiation Monitoring System (RMS) area monitors or by portable detection equipment through routine plant surveillance.

The RMS consists of twenty gamma detectors which serve to warn

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3.0 ASSESSMENT FACILITIES (continued)

3.2.1.3.1 (continued)

personnel of any increase in radiation activity at various locations throughout the plant. The activity level is transmitted to the control room for indication, recording and alarming.

Immediately upon indication of an unexplained increase in radiation levels, a full investigation will be conducted to determine the cause of the activity increase or alarm. The affected area will be evacuated and personnel will remain clear until re-entry is authorized by the Shift Supervisor.

Continued plant operation will depend upon whether acceptable activity levels could be achieved.

3.2.1.3.2 If abnormal radiation levels are suspected off-site, monitoring teams will be dispatched for confirmation to the affected areas to conduct surveys. It may be necessary to recommend protective actions for the public in the affected areas should conditions warrant.

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TABLE VII.3.2
RADIOLOGICAL ENVIRONMENTAL SAMPLING LOCATIONS AND MEDIA

Sample Number	Location	Distance from FCS Reactor Bldg. (miles)	Direction (Degrees from North)	Airborne Partic.	Airborne Iodine	Ambient B-Y	TLD	Veg.	Sur. Water	Well Water	Fresh Milk	Pre-Serv Milk	Cattle Feed Dairy	Soil	Other
1a	On Site, 1000' NW of Reactor	.2		X	X	X	X								
1b	On Site crop fields	0.4 or 0.4	225-285° 150-180°					X							
2	Substation at S. 16th In Blair	3.1	286°	X	X		X								
3	Fl. Calhoun Fire Sta	4.8	149°	X	X	X									
4	Electric Bldg. 17th Harney-Onaha, NE	22	152°	X	X	X	X								
5	On Site at OXigester	0.1	74°	X	X										
6	West bank of river downstream from reactor building	0.5	-				X		X						
7	125' upstream from Intake bldg. on West bank of river	-	-												Mud & Silt
8a	Fence around Intake gate at DeSoto Refug.	2	101°				X		X						
8b	DeSoto Lake Boat Ramp	3.7	118°												
8c	Headquarters Bldg. DeSoto Refuge	3.1	53°							X					
8d	Crop fields in or near DeSoto Wildlife Refuge	2.4	64-74°					X							
9	Metropolitan Util District Florence Treatment Plant North Onaha, NE	17	156°						X						

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TABLE VII.3.2 (cont'd)
RADIOLOGICAL ENVIRONMENTAL SAMPLING LOCATIONS AND MEDIA

Sample Number	Location	Distance from CS Reactor Bldg. (miles)	Direction (degrees from North)	Airborne Partic.	Airborne Iodine	Ambient p-y	ILD	Veg.	Sur. Water	Well Water	Fresh Milk	Pre-Serv. Milk	Cattle Feed Dairy	Soil	Other
10	Council Bluffs Municipal Water Work Intake - C.B., Iowa	.22	145°						X						
11	W. of Site Entrance	.9	248°			X	X								
12	North Site Boundary	.5	30°				X								
13	Entr. to Plant Site	.5	206°				X								
14	1,000' SE of Reactor		-				X								
15	Bridge on Hwy 73 N. edge of DeSoto, Ill	1.6	144°				X			X					
16	Smith Farm	1.9	15°			X	X								
17	Dana College	4.3	295°			X									
18	Bridge, Hwy 30	2.2	334°			X									
19	J. Rand Farm	1.9	15°			X									
20	S. Rand Farm	1.9	31°			X									
21	B. Jones Farm	1.6	155°			X									
22	Sawall/Schideler Farm	1.1	204°			X				X					
23	C. Jensen Farm	1.1	270°			X									
24	Hansen/Suwerkubbe Farm	1.2	277°			X									
25	Blair Sr. High	1.2	308°			X				X					
27	Flynn Dairy	3.4	310°			X					X	X	X	X	

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TABLE VII.3.2 (cont'd)

RADIOLOGICAL ENVIRONMENTAL SAMPLING LOCATIONS AND MEDIA

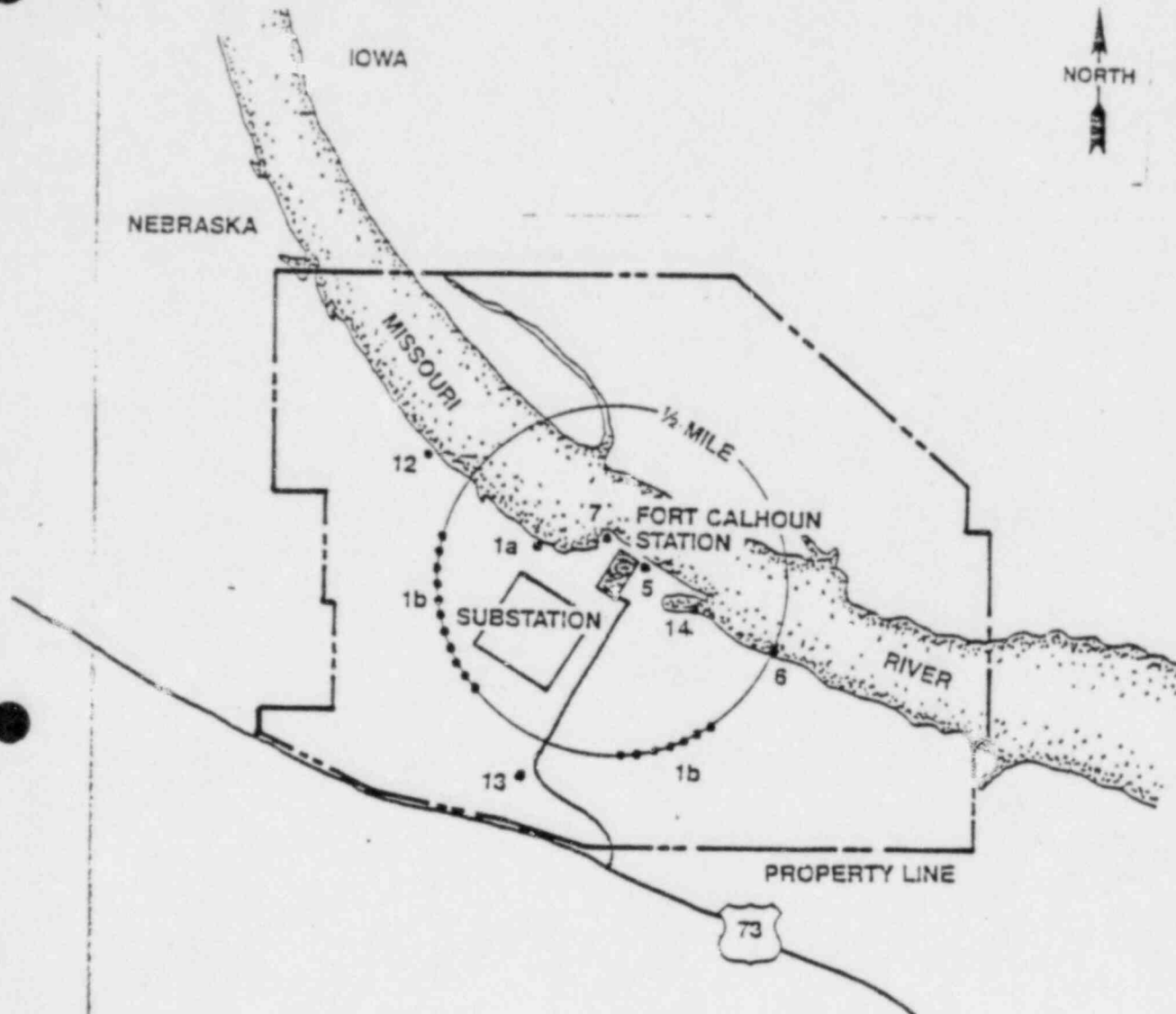
Sample Number	Location	Distance from FCS Reactor Bldg. (miles)	Direction (Degrees from North)	Airborne Partic.	Airborne Iodine	Ambient β - γ	TLD	Veg.	Sur. Water	Well Water	Fresh Milk	Pre-Serv. Milk	Cattle Feed Dairy	Soil	Other
29	75' downstream of lagoon discharge on West bank of River	-	-												Mud & Silt
30	Agrico Ammonia Co.	1.8	325 ⁰												**
31	L. Rogge Farm	2.1	278 ⁰												***
32	Sonderup Farm	3.7	329 ⁰												***
33	Garden 2.0 miles NW of Site	1.6	271 ⁰					X							
34	Karras Farm	4.3	147 ⁰					X							
35	Garden-SE Blair, NE	2.9	297 ⁰					X							
36	Farm near DeSoto, NE	1.0	153 ⁰					X							
42	Miller Farm	0.8	206 ⁰								X	X	X	X	
43	Fish Sampling area - Missouri River*	Within 3 miles of F.C. Plant	-												Fish
44	Kohr Farm	7.9	187 ⁰								X	X	X	X	

* This is not on the map.

** Precipitation

*** Cattle Feed-Beef

NOTE: The sample numbers which do not appear have been deleted.



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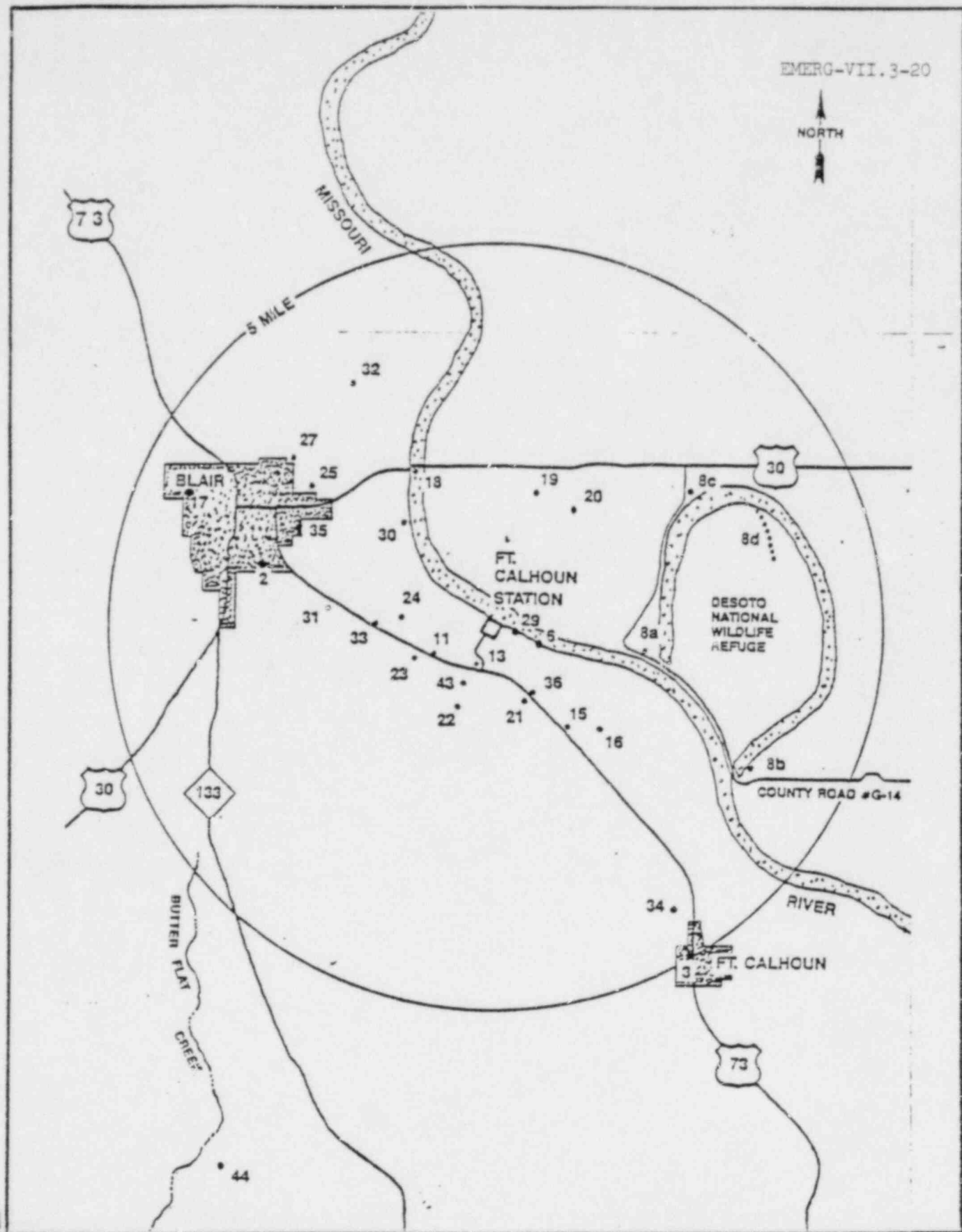
ENVIRONMENTAL
RADIOLOGICAL
SAMPLING POINTS

R2 7-7-81

Emergency Plan

Figure VII.3.1

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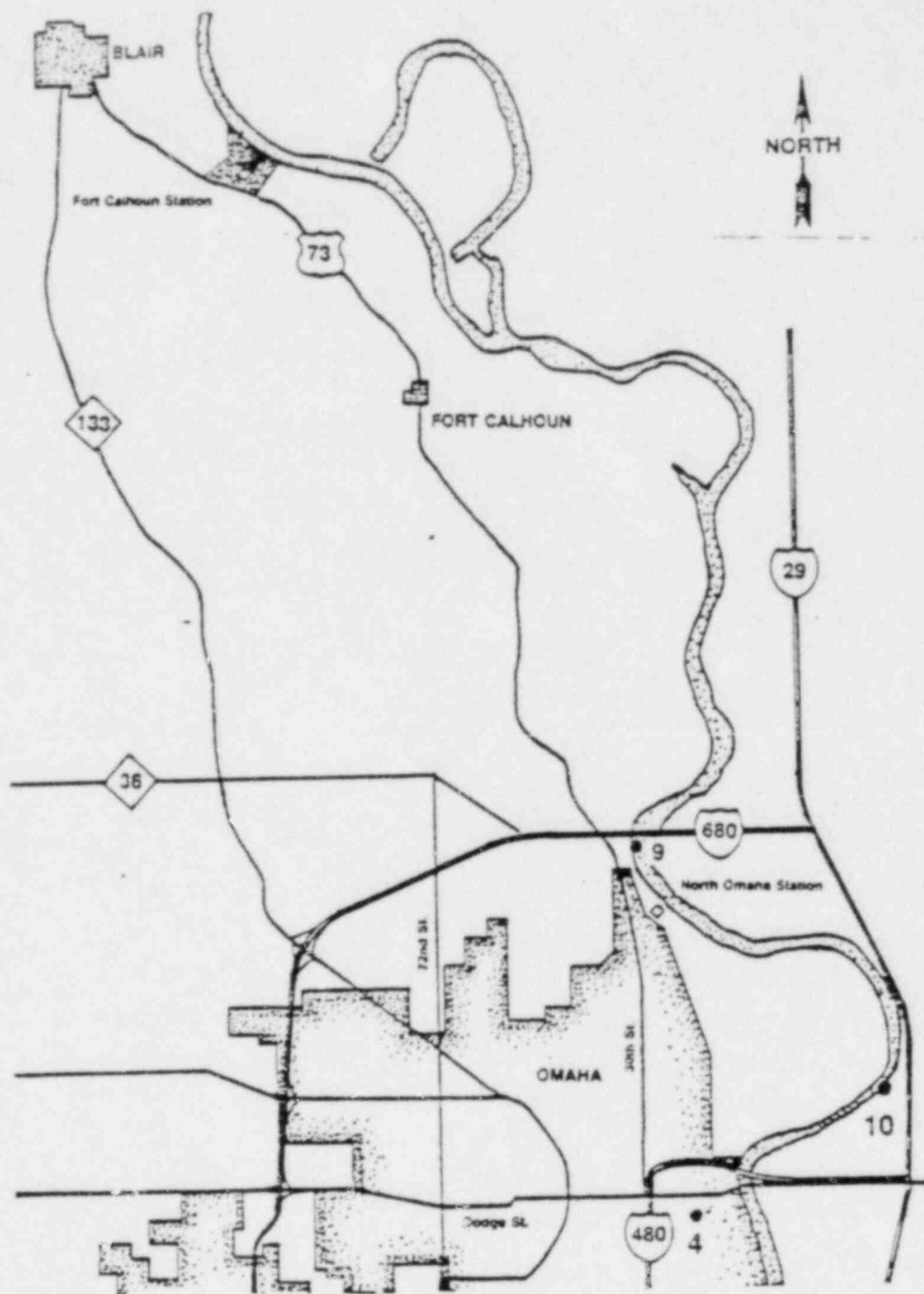
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Fort Calhoun Station
Unit #1

ENVIRONMENTAL
RADIOLOGICAL
SAMPLING POINTS

R2 7-7-81

Emergency Plan

Figure VII.3.2



NOT TO SCALE

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Fort Calhoun Station
Unit #1

ENVIRONMENTAL
RADIOLOGICAL
SAMPLING POINTS

R2 7-7-81

Emergency Plan

Figure VII.3.3

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SECTION IX

RECOVERY

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M - RECOVERY AND REENTRY PLANNING AND POST ACCIDENT OPERATIONS

1.0 Recovery Organization Background

The Recovery Organization responsibilities include the overall coordination and management of the recovery effort and has provisions for technical and administrative services, design work, scheduling, planning, quality control/assurance, construction and vendor support. The Recovery Organization's effort during emergencies is viewed as a long term effort requiring the Recovery Organization to be present 24 hours a day. The Emergency Team and Technical Augmentation Staff in contrast, function as an immediate response organization for emergencies. It provides required immediate response actions, radiological controls, and compiles technical data for its own use and the review of the Recovery Organization. From the point of initiation of an emergency classification until the Recovery Organization is onsite and fully operational, the Emergency Team and Technical Augmentation Staff will respond to a casualty. Once on-site, the Recovery Organization under the direction of the Recovery Manager will coordinate the Emergency Team and Technical Augmentation Staff by incorporating them into the Recovery Organization and assuming complete control of the emergency.

The Recovery Organization is composed of all the necessary technical, administrative, managerial, and support personnel that may be required for an emergency, as illustrated on Figure M-1 of this section. The organization is capable of 24 hour a day sustained operation. For each job title shown on Figure M-1, there are assigned two personnel to fill that position, which facilitates the 24 hour a day operational capability.

Sections M.2.1 through M.2.10, give detailed descriptions of each person's responsibility within the Recovery Organization.

1.1 Activation Criteria

As explained in Section D of this plan, there exists four distinctly different emergency classifications. This section defines what criteria is required to activate the Recovery Organization in each emergency classification.

1.1.1 Notification of Unusual Event

When this event occurs, the Plant Operations Manager and Shift Operations Supervisor will activate the Operation Support Center. Additional Recovery personnel needed to augment plant operations will include the Recovery Manager, Emergency Coordinator, Core Physics Coordinator, I&C Supervisor, and the Maintenance/Quality Control Supervisor. The remainder of the Recovery Organization are not required to be notified unless the event is elevated to one of the higher emergency classifications.

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1.1 (Continued)

1.1.2 Alert

When this event occurs, the Operation Support Center and Technical Support Center will be activated. The Recovery Manager, Emergency Coordinator, the Technical Support Manager with his support group and the Plant Operations Manager with his support group will report to their assigned emergency response centers. The remainder of the Recovery Organization will be notified and placed in a "Standby" status. They will only be activated when one of the following is met:

- a. The Recovery Manager, Emergency Coordinator, Plant Operations Manager, and the Emergency Duty Officer agree that the Recovery Organization should be activated for possible emergency escalation.
- b. The event is elevated to the next higher emergency classification.

1.1.3 Site Area Emergency

For this event, the entire Recovery Organization will be activated and informed to report to their emergency response center assignment as soon as possible.

1.1.4 General Emergency

The entire Recovery Organization is activated and requested to report to their emergency response center assignment as soon as possible.

1.2 Method of Activation

Activation of the Recovery Organization will be in accordance with implementing procedure EPIP-RR-1 (Activation of Recovery Organization) Shift Supervisor/EDO will call the Plant Operations Manager who calls the Recovery Manager as depicted in Figure M-2. The Recovery Manager then calls the Administrative Logistics Manager and informs him of the emergency. The Administrative Logistics Manager will then notify all Managers/Coordinators listed below, inform them of the emergency and direct them to initiate their notification calls with their group prior to reporting to the assigned emergency response areas.

- (a) Technical Support Manager
- (b) Plant Operations Manager
- (c) Emergency Coordinator
- (d) Administrative Logistics Manager
- (e) Emergency News Center Coordinator
- (f) Design & Construction Manager
- (g) Manager of Waste Management
- (h) Scheduling/Planning Manager
- (i) Advisory Support Coordinator

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1.2 (Continued)

After each respective Manager/Coordinator listed above is informed of the emergency, he in turn is responsible for calling the personnel depicted in Figure M-2 who work under his cognizance (on the Recovery Organization) and informing them of the emergency and ensuring that they report to their assigned emergency station. Each Manager/Coordinator listed above is responsible for the accountability of personnel under his direction and will be required to maintain a list of those individuals reporting to their emergency assignments for presentation to the Recovery Manager. This will allow the Recovery Manager to assess the manpower situation and to more effectively manage the Recovery Organization.

1.3 Relaxation Criteria

The decision to relax/curtail duties of Recovery Organization personnel shall be with the concurrence of the Recovery Manager, Plant Operations Manager and the Emergency Coordinator. This decision will be based on input from their advisors and include such criteria but not be limited to:

- (a) Stable reactor shutdown with direction toward a cold shutdown condition.
- (b) Containment Building integrity
- (c) Availability of an operational heat sink
- (d) Operability of instrumentation and control equipment.

2.0 Organizational Arrangement, Assignment, and Responsibilities

Figure M-1 depicts the organizational arrangement of the Recovery Organization. The personnel selected to fill each position on Figure M-1 were selected in accordance with normal operational duties with the intent of minimizing the amount of training that members require in order to fulfill the responsibilities of the emergency positions. For most personnel on the Recovery Organization, the job responsibilities they have during an emergency event correlate very closely to their normal job responsibilities, thereby utilizing the strengths of each individual on the Recovery Organization to the maximum extent possible.

The qualification of Recovery Organization personnel is assured through the surveillance of Emergency Preparedness Test #12, Emergency Response Training.

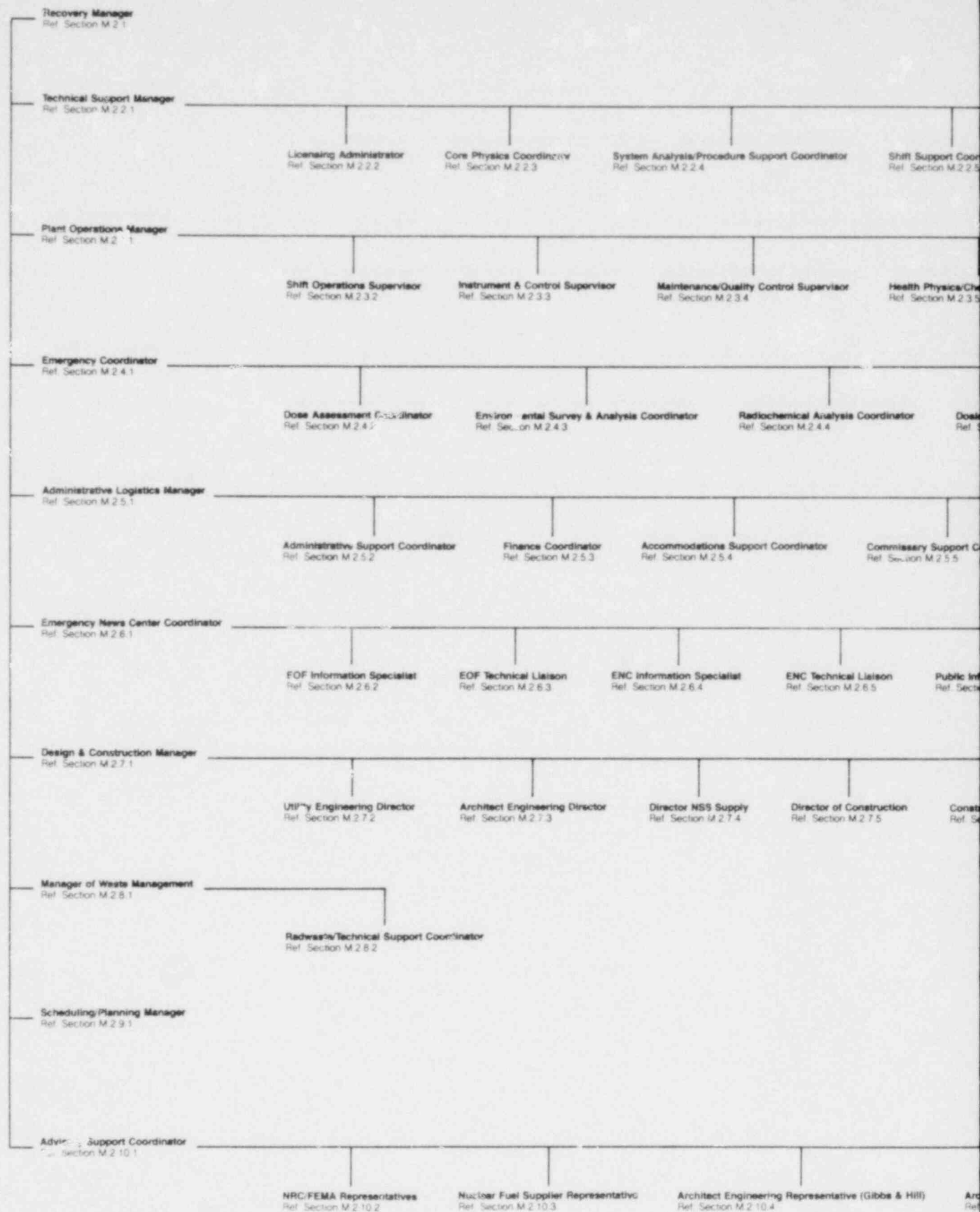
Each person assigned to Figure M-1 has responsibilities on the Recovery Organization which are described in detail in Sections M.2.1 through M.2.10 of this plan and contain the following information:

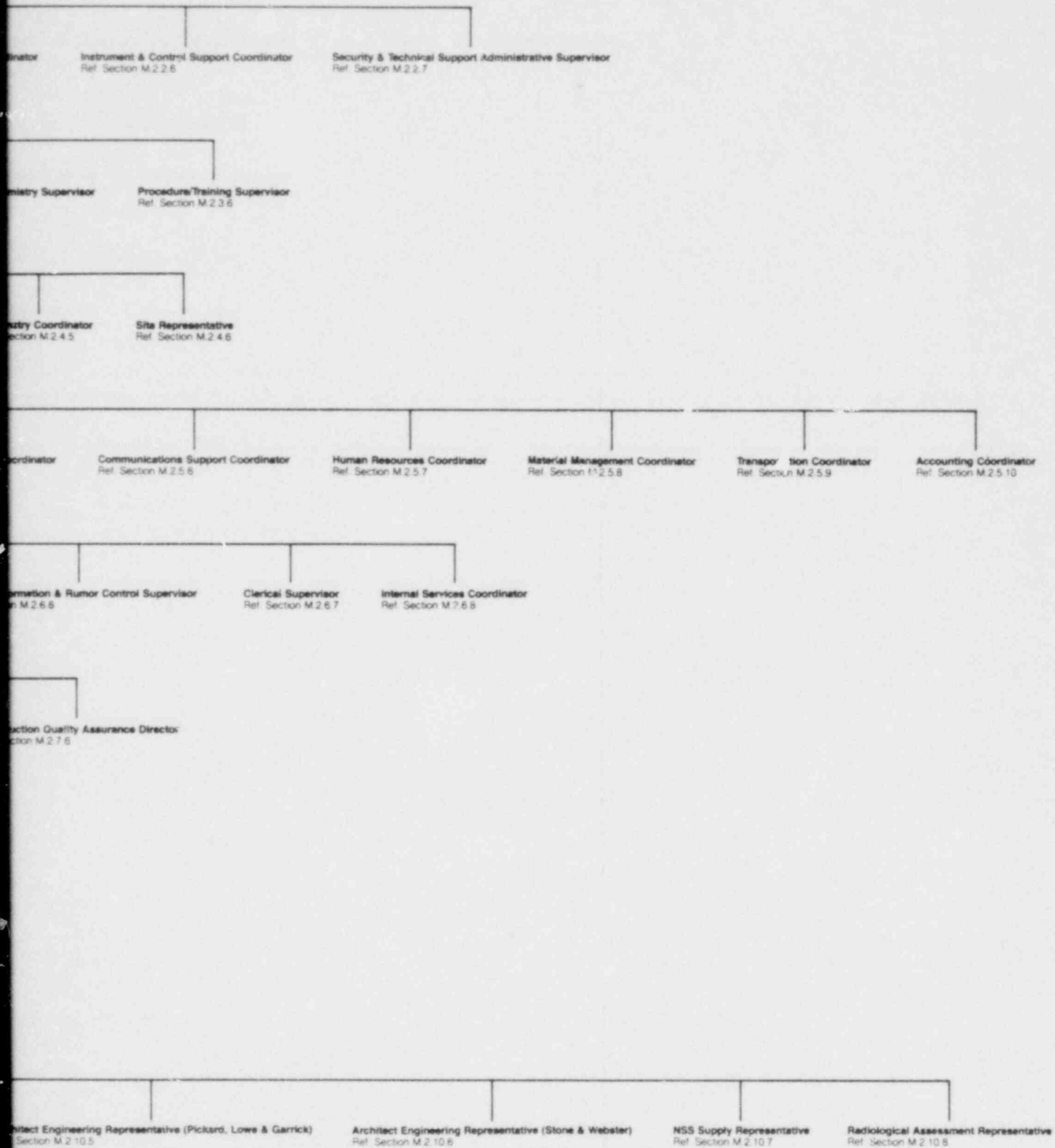
- (a) Primary individual to recovery assignment (by normal job title).
- (b) Alternate individual to recovery assignment (by normal job title).
- (c) Reporting location.
- (d) To Whom the member reports
- (e) Whom the member supervises/coordinates.
- (f) Basic functions.
- (g) Primary responsibilities.

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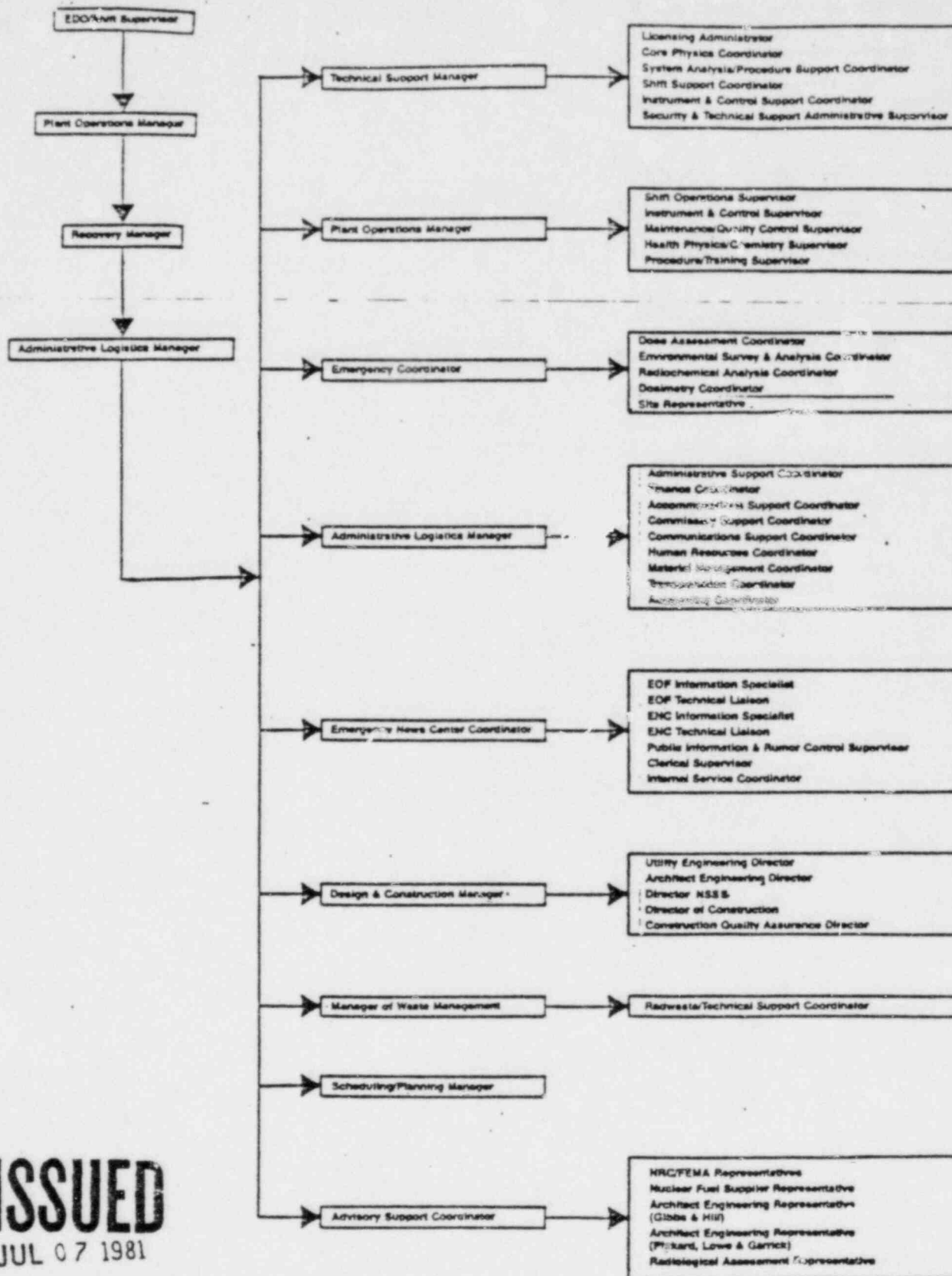
Omaha Public Power District
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Unit #1

RECOVERY ORGANIZATION

Emergency Plan

Figure

M-1



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Omaha Public Power District
Fort Calhoun Station
Unit #1

RECOVERY ORGANIZATION CALL TREE

Emergency Plan

Figure

M-2

2.1 RECOVERY MANAGER

Primary (Job Title):

Division Manager - Production Operations

Alternate (Job Title):

Division Manager - Electric Operations

Reporting Location:

Emergency Operations Facility

Reports To:

OPPD Senior Management

Supervises/Coordinates:

- (1) Technical Support Manager
- (2) Plant Operations Manager
- (3) Manager of Waste Management
- (4) Design and Construction Manager
- (5) Emergency Coordinator
- (6) Administrative Logistics Manager
- (7) Scheduling/Planning Manager
- (8) Advisory Support Coordinator
- (9) Emergency News Center Coordinator

Basic Function(s):

To oversee all recovery efforts following the District management's request for assistance (non-emergency action levels) or the declaration of a site area emergency or general emergency.

Primary Responsibilities:

- (1) Reports to Utility Corporate Management on all functions directly relating to the recovery effort.
- (2) In conjunction with the EOF Information Specialist, the Recovery Manager will provide approval on all plant status information releases.
- (3) Coordinates with the Emergency News Center Coordinator to make himself available for press conferences to address technical questions and provides information on official judgements made with regard to power plant recovery operations.
- (4) Holds daily meetings with the Advisory Support Group. Here he can interface with Senior NRC, FEMA, Vendor and A/E Representatives on site.

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2.1 (Continued)

- (5) Provides approval and initiates transmittal of any recommendations to state and local governments regarding protective and/or evacuation measures.
- (6) Develops a long term recovery plan and schedule in co-operation with the Advisory Support Group and the Recovery Organization Managers/Coordinators.
- (7) Provides approval for either upgrading or downgrading the emergency classification.
- (8) Provides authorization for on-site and off-site re-entry into previously evacuated areas in concurrence with the Emergency Coordinator.
- (9) Ensures that the Recovery Organization is functioning and has absorbed the Emergency Team and Technical Augmentation Staff to duties within the Recovery Organization, either in their same or different capacities.
- (10) Assumes duties from the Emergency Duty Officer and terminate that position.
- (11) Provides final approval for the use of 50 emergency purchase orders allotted for the initial phase of the recovery effort. See memorandum on the following page.
- (12) Requests Federal assistance if the State officials have not done so.
- (13) Provides final approval with the Concurrence of Plant Operations Manager and Emergency Coordinator regarding relaxation/curtailment of Recovery Organization duties.

Applicable Implementing Procedures:

EPIP-RR-10: "RECOVERY ORGANIZATION RECOVERY MANAGER"

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Interoffice Memorandum

DATE: June 27, 1980
FROM: Wayne Steele
TO: Bill Jones

RE: Materials Management's Emergency Purchasing Procedure
for Fort Calhoun Nuclear Station

- A. Materials Management has designated a special block of 50 purchase order numbers (attached) to be used during official declared emergencies.
- B. Recommend these purchase order numbers be safeguarded at Fort Calhoun for use by the Recovery Organization. Responsibility for their use resides with the recovery manager or his designated representative.
- C. The Recovery Organization must notify purchasing, by second normal duty day, after the issuance of special order numbers. The following information is required:
 1. Order number used
 2. Requisition number assigned to Purchase Order
 3. Vendor name and address
 4. Material or service required
 5. Quote or estimated dollar amount expended
- D. Additional emergency order numbers will be authorized upon request from recovery manager.

Wayne Steele
Wayne Steele

WS:md
Attachment

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FORT CALHOUN EMERGENCY RECOVERY
PURCHASE ORDER REGISTERTHESE ORDERS ARE TO BE USED ONLY DURING A DECLARED PLANT
EMERGENCY.

<u>PURCHASE ORDER #</u>	<u>ISSUE DATE</u>	<u>AUTHORIZED BY</u>	<u>VENDOR NAME</u>
FCE 201			
FCE 202			
FCE 203			
FCE 204			
FCE 205			
FCE 206			
FCE 207			
FCE 208			
FCE 209			
FCE 210			
FCE 211			
FCE 212			
FCE 213			
FCE 214			
FCE 215			
FCE 216			
FCE 217			
FCE 218			
FCE 219			
FCE 220			

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FORT CALHOUN EMERGENCY RECOVERY
PURCHASE ORDER REGISTERTHESE ORDERS ARE TO BE USED ONLY DURING A DECLARED PLANT
EMERGENCY.

<u>PURCHASE ORDER #</u>	<u>ISSUE DATE</u>	<u>AUTHORIZED BY</u>	<u>VENDOR NAME</u>
FCE 221			
FCE 222			
FCE 223			
FCE 224			
FCE 225			
FCE 226			
FCE 227			
FCE 228			
FCE 229			
FCE 230			
FCE 231			
FCE 232			
FCE 234			
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FCE 236			
FCE 237			
FCE 238			
FCE 239			
FCE 240			
FCE 241			
FCE 242			
FCE 243			

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FORT CALHOUN EMERGENCY RECOVERY
PURCHASE ORDER REGISTERTHESE ORDERS ARE TO BE USED ONLY DURING A DECLARED PLANT
EMERGENCY.

<u>PURCHASE ORDER #</u>	<u>ISSUE DATE</u>	<u>AUTHORIZED BY</u>	<u>VENDOR NAME</u>
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FCB 244

FCB 245

FCB 246

FCB 247

FCB 248

FCB 249

FCB 250

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2.2 TECHNICAL SUPPORT GROUP

2.2.1 TECHNICAL SUPPORT MANAGER

Primary (Job Title):

Section Manager - Technical Services

Alternate (Job Title):

Manager - Reactor & Computer Technical Services

Reporting Location:

Technical Support Center

Reports To:

Recovery Manager

Supervises/Coordinates:

- (1) Licensing Administrator
- (2) Core Physics Coordinator
- (3) Systems Analysis/Procedure Support Coordinator
- (4) Shift Support Coordinator
- (5) Instrument & Control Support Coordinator
- (6) Security & Technical Support Administrative Supervisor

Basic Function(s):

To analyze and develop plans and procedures necessary to support operations personnel in performing a safe plant shutdown with minimal effects on public health and safety.

To provide a central facility for the collection, retention, and transmittal of plant and local environmental parameters.

Primary Responsibilities:

- (1) To ensure a timely collection, retention, and transmittal of plant information to the emergency response organization.
- (2) To ensure a timely resolution to NRC questions regarding abnormal operation and/or changes to Technical Specifications and FSAR's.
- (3) To oversee the development of emergency plans and procedures regarding abnormal system or equipment operations.

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2.2.1 (Continued)

- (4) To ensure adequate technical and clerical personnel are available to support the Technical Support and Plant Operations Group.
- (5) To oversee any instrument and control modifications and ensure adequate core surveillance and protection is available.
- (6) To ensure that adequate office space, equipment, supplies, and communications equipment are readily available to the Technical Support Group.
- (7) To coordinate with the Recovery Manager and Emergency Coordinator regarding the relaxation/tailoring of Recovery Organization duties.

Applicable Implementing Procedures:

EPIP-RR-11: "TECHNICAL SUPPORT MANAGER"

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2.2.2 LICENSING ADMINISTRATOR

Primary (Job Title):

Licensing Administrator

Alternate (Job Title):

Licensing Engineer

Reporting Location:

Emergency Operations Facility

Reports To:

Technical Support Manager

Supervises/Coordinates:

N/A

Basic Function(s):

Resolve as necessary with NRC representatives questions regarding Technical Specifications, FSAR's, abnormal operating modes, and other licensing requirements.

Primary Responsibilities:

- (1) Coordinates with NRC representatives to resolve questions in a timely manner concerning FSAR and Technical Specifications amendments with regard to existing plant conditions.
- (2) Coordinates with NRC representatives to resolve in a timely manner license requirements associated with proposed abnormal operating modes or plant modifications.
- (3) Performs safety analyses to support licensing submittals.
- (4) Responds to non-compliances discovered through NRC inspection of the utility's nuclear facility.

Applicable Implementing Procedures:

EPIP-RR-12: "LICENSING ADMINISTRATOR"

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2.2.3 CORE PHYSICS COORDINATOR

Primary (Job Title):

Reactor Engineer

Alternate (Job Title):

Reactor Systems Simulation Specialist

Reporting Location:

Technical Support Center

Reports To:

Technical Support Manager

Supervises/Coordinates:

Reactor & Computer Technical Services Department

Basic Function(s):

Analyze core parameters and develop guidance for plant operations personnel with regard to core protection.

Primary Responsibilities:

- (1) Coordinate all activities of the Reactor & Computer Technical Services Department needed to support the recovery operation and ensure safe core conditions.
- (2) Analyze core parameters and provide an update on the condition of the core.
- (3) Review proposed normal and out-of-normal plant operations to determine possible changes in core conditions.
- (4) Develop and propose recommendations to plant operations that would effect safer core conditions.

Applicable Implementing Procedures:

EPIP-RR-13: "CORE PHYSICS COORDINATOR"

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2.2.4 SYSTEMS ANALYSIS/PROCEDURE SUPPORT COORDINATOR

Primary (Job Title):

Manager - Operations Technical Support Services

Alternate (Job Title):

Plant Engineer - Fort Calhoun

Reporting Location:

Technical Support Center

Reports To:

Technical Support Manager

Supervises/Coordinates:

Operations Technical Support Services Department

Basic Function(s):

Coordinates operations technical support personnel in analyzing system problems and developing out-of-normal plans and procedures to support system operation.

Primary Responsibilities:

- (1) Organize his department and establish a schedule of working hours to support the recovery effort.
- (2) Analyze problems involving degraded plant systems and equipment to determine whether modifications or additional equipment are in order.
- (3) Interface with plant operations and develop out-of-normal plans and procedures to support any system modifications or equipment additions that were made.

Applicable Implementing Procedures:

EPIP-RR-14: "SYSTEMS ANALYSIS/PROCEDURE SUPPORT COORDINATOR"

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2.2.5 SHIFT SUPPORT COORDINATOR

Primary (Job Title):

(Off)-Shift Technical Advisor

Alternate (Job Title):

(Off)-Shift Technical Advisor

Reporting Location:

Technical Support Center

Reports To:

Technical Support Manager

Supervises/Coordinates:

All support personnel assigned to the plant operations group.

Basic Function(s):

Coordinates with the Operations Shift Supervisor for the effective utilization of off-shift support personnel assigned to the Plant Operations Group.

Primary Responsibilities:

- (1) Organizes his staff and establishes a schedule of working hours to support the recovery effort.
- (2) Provides assistance for system valve alignment and equipment operations.
- (3) Provides interface with Technical Support Group and Emergency Response Organization personnel.
- (4) Supports plant operations group in assisting other Recovery Organization Members.
- (5) Assimilates and provides plant information required by the personnel assigned as data collectors.
- (6) Provides the necessary support to the plant operations group for monitoring plant parameters and analysis of plant conditions.

Applicable Implementing Procedures:

EPIP-RR-15: "SHIFT SUPPORT COORDINATOR"

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2.2.6 INSTRUMENT & CONTROL SUPPORT COORDINATOR

Primary (Job Title):

Supervisor - I&C and Electrical Technical Services

Alternate (Job Title):

Manager - Electrical Engineering

Reporting Location:

Technical Support Center

Reports To:

Technical Support Manager

Supervises/Coordinates:

Operations Technical Support Services Department

Basic Function(s):

Analyzes instrument and controls problems and develop possible solutions.

Designs and coordinates any modifications to existing instrument and control systems.

Primary Responsibilities:

- (1) Coordinates all activities of the I&C and Electrical Engineers needed to support the recovery effort.
- (2) Oversees the investigation of all instrument and control problems and reviews problem solving alternatives developed by his department as to their adequacy and workability.
- (3) Develops and proposes to the Plant Operations Group, alternative means of monitoring and controlling plant parameters.
- (4) Oversees the design of and coordinates modifications to existing facilities and provides the technical support for startup services to ensure continued control and monitoring of plant parameters.

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2.2.6 (Continued)

- (5) Coordinates with the Design and Construction Manager where major instrument and control modifications are required.
- (6) Provides the technical expertise in the I&C and electrical engineering for response to questions and inquiries from various regulatory agencies.

Applicable Implementing Procedures:

EPIP-RR-16: "INSTRUMENT & CONTROL SUPPORT COORDINATOR"

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2.2.7 SECURITY & TECHNICAL SUPPORT ADMINISTRATIVE SUPERVISOR

Primary (Job Title):

Supervisor - Administrative & Security Services

Alternate (Job Title):

Training Coordinator

Reporting Location:

Technical Support Center

Reports To:

Technical Support Manager

Supervises/Coordinates:Security and Administrative personnel
Members of the Emergency TeamBasic Function(s):

- (1) Data Coordinator
- (2) Security Coordinator
- (3) Administrative Coordinator

Primary Responsibilities:

- (1) Assigns personnel to control the accumulation, retention, and retrieval of plant and local environmental parameters in cooperation with Shift Support Coordinator and Emergency Coordinator.
- (2) Provides automatically and upon request information needed by members of the emergency response organization.
- (3) Will serve as single point interface for the acquisition of plant data to ensure minimum interference with shift operations personnel. This is accomplished through interfacing with the Shift Support Coordinator.

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2.2.7

(Continued)

- (4) Directs normal in-plant security personnel in maintaining the plant security system in support of the recovery effort.
- (5) Provides in-plant security personnel at various locations to support the recovery effort.
- (6) Provides clerical support (e.g., typing, filing, office equipment operation) to all areas within the Technical & Operations Support Groups.
- (7) Coordinates with the Administrative Logistics Group in order to obtain skilled personnel needed to support the various Technical & Operations Support Group functions.
- (8) Coordinates with the Administrative Logistics Group in order to obtain additional work space, office supplies, communications, and office equipment.
- (9) Coordinates Emergency Team Personnel assigned Tags 1, 1A, 16, 17, 22, and incorporates these individuals into the Recovery Organization.

Applicable Implementing Procedures:

EPIP-RR-17: "SECURITY & TECHNICAL SUPPORT ADMINISTRATIVE SUPERVISOR"

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2.3 PLANT OPERATIONS GROUP

2.3.1 PLANT OPERATIONS MANAGER

Primary (Job Title):

Manager - Fort Calhoun Station

Alternate (Job Title):

Section Manager - Operations

Reporting Location:

Operations Support Center

Reports To:

Recovery Manager

Supervises/Coordinates:

- (1) Shift Operations Supervisor
- (2) Instrument & Control Supervisor
- (3) Maintenance/Quality Control Supervisor
- (4) Health Physics/Chemistry Supervisor
- (5) Procedure/Training Supervisor

Basic Function(s):

Implements the in-plant recovery activities with the objective of taking the plant to a safe shutdown condition in a manner which minimizes the effects on the health and safety of the public.

Primary Responsibilities:

- (1) Oversees the implementation of normal and emergency procedures needed to bring the plant to a safe shutdown.
- (2) Oversees the in-plant maintenance and I&C activities required to support the recovery effort.
- (3) Determines the need for out-of-normal and emergency procedures, supervises the development and implementation of these procedures.

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2.3.1 (Continued)

- (4) Responsible for all in-plant health physics activities, including sampling and ALARA programs.
- (5) Provides information and recommendations to the Recovery Manager concerning future operations that could affect the plant or the environment.
- (6) Coordinates with the Administrative Logistics Manager to request the various services provided by the Administrative Logistics Group.
- (7) Provides concurrence in cooperation with the Recovery Manager and Emergency Coordinator regarding relaxation/curtailment of Recovery Organization duties.

Applicable Implementing Procedures:

EPIP-RR-18: "PLANT OPERATIONS MANAGER"

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2.3.2 SHIFT OPERATIONS SUPERVISOR

Primary (Job Title):

Supervisor Operations - Fort Calhoun

Alternate (Job Title):

Supervisor Technical - Fort Calhoun

Reporting Location:

Operations Support Center

Reports To:

Plant Operations Manager

Supervises/Coordinates:

Normal plant operations personnel and the Emergency Response Organization shift support personnel

Basic Function(s):

Responsible for the safe operation of the plant. This will require him to implement normal and emergency procedures and instructions to bring the plant to a safe shutdown.

Primary Responsibilities:

- (1) Directs the activities for personnel in the Operations and Emergency Response Organization.
- (2) Ensure that plant operations personnel are in compliance with all plant procedures, directives, technical specifications, and emergency plans.
- (3) Responsible for monitoring plant parameters and conditions.
- (4) Responsible for system valve alignment and equipment operation.
- (5) Ensures proper interface with the Operations Group and other members of the Emergency Response Organization in support of the recovery operation.
- (6) Provides information input to Shift Support Coordinator who in turn supplies this information to the proper individuals.
- (7) Provides input to Plant Operations Manager regarding the recovery operation.

Applicable Implementing Procedures:

EPIP-RR-19: "SHIFT OPERATIONS SUPERVISOR"

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2.3.3 INSTRUMENT & CONTROL SUPERVISOR

Primary (Job Title):

Supervisor - I&C and Electrical Field Maintenance

Alternate (Job Title):

Instrument & Control Engineer

Reporting Location:

Technical Support Center

Reports To:

Plant Operations Manager

Supervises/Coordinates:

In-house Instrument and Control Technicians
Members of the Technical Augmentation Staff

Basic Function(s):

Responsible for the repair and installation of modifications to existing instrument and control equipment in support of the recovery effort.

Primary Responsibilities:

- (1) Directs Instrument and Control Technicians in the repair and maintenance of existing instrument and control and electrical equipment to original specifications in order to be in compliance with the Technical Specifications and support the recovery effort.
- (2) Organize his staff and establish a schedule of working hours to support the recovery effort.
- (3) Direct instrument and control personnel in the installation of modifications to existing equipment in support of the recovery effort.
- (4) Coordinates the Technical Augmentation Staff two (2) Electricians and one (1) I&C Technician and incorporates these individuals into the Recovery Organization.

Applicable Implementing Procedure:

EPIP-RR-20: "INSTRUMENT & CONTROL SUPERVISOR"

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2.3.4 MAINTENANCE/QUALITY CONTROL SUPERVISOR

Primary (Job Title):

Supervisor Maintenance - Fort Calhoun

Alternate (Job Title):

Supervisor Field Maintenance - Fort Calhoun

Reporting Location:

Technical Support Center

Reports To:

Plant Operations Manager

Supervises/Coordinates:

In-house Maintenance Staff

In-house QC Staff

Mechanic & Maintenance Technical Augmentation Staff

Basic Function(s):

Responsible for the maintenance, repair, installation of modifications and quality control for existing equipment not under the cognizance of the Design and Construction Group.

Primary Responsibilities:

- (1) Directs in-house maintenance personnel in the repair and maintenance of existing equipment to original specifications in order to be in compliance with the Technical Specifications and support the recovery effort.
- (2) Organize his staff and establish a schedule of working hours to support the recovery effort.
- (3) Ensures that the documentation of all maintenance activities is maintained.
- (4) Direct in-house maintenance personnel in the installation of modifications to existing equipment in support of the recovery effort.

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2.3.4 (Continued)

- (5) Assigns in-house QC inspectors to provide the quality control needed to support in-house maintenance activities.
- (6) Coordinates the Technical Augmentation Staff's one (1) Machinist and one (1) General Maintenance Technician and incorporates these individuals to duties into the Recovery Organization.

Applicable Implementing Procedures:

EPIP-RR-21: "MAINTENANCE/QUALITY CONTROL SUPERVISOR"

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2.3.5 HEALTH PHYSICS/CHEMISTRY SUPERVISOR

Primary (Job Title):

Plant Health Physicist

Alternate (Job Title):

Plant Chemist

Reporting Location:

Technical Support Center

Reports To:

Plant Operations Manager

Supervises/Coordinates:

All In-house Health Physics/Chemistry Personnel
Emergency Team and Technical Augmentation Staff

Basic Function(s):

Directs in-house Health Physics/Chemistry personnel in collection of on-site radiation/chemical data, dose assessments, and radiation protection programs.

Primary Responsibilities:

- (1) Organize his staff and establish a schedule of working hours to support the recovery effort.
- (2) Ensure the Recovery Organization training in the area of radiation and respiratory protection.
- (3) Provide whole body counts for reporting and terminating personnel to determine MPC body burdens.
- (4) Support the recovery operation by providing all necessary health physics coverage.
- (5) Develop plans, procedures, and methods for keeping radiation exposure of recovery personnel as low as reasonably achievable (ALARA).

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2.3.5 (Continued)

- (6) Coordinates with Dosimetry Coordinator and ensures personnel TLD's are read, and an updated computer listing is provided.
- (7) Ensures the optimum operation of all radiation/chemistry monitors, instruments, and equipment.
- (8) Ensures chemical group operating records are maintained.
- (9) Develop, implement, and perform various analyses to provide chemical control for all plant systems.
- (10) Coordinates controlled releases to the environment in compliance with federal and state regulations.
- (11) Assists in discussion of Radiological assessments with Dose Assessment Coordinator to verify radioactive release data.
- (12) Coordinates the Technical Augmentation Staff's one (1) Access Control Technician, one (1) Radiochemistry Technician and the Emergency Team personnel assigned to Tags 11, 12, 13, 14, 18, 19, 19A, 21, and 21A. He will incorporate these individuals within the Recovery Organization.

Applicable Implementing Procedures:

EPIP-RR-22: "HEALTH PHYSICS/CHEMISTRY SUPERVISOR"

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2.3.6 PROCEDURE/TRAINING SUPERVISOR

Primary (Job Title):

Training Supervisor

Alternate (Job Title):

Training Coordinator

Reporting Location:

Technical Support Center

Reports To:

Plant Operations Manager

Supervises/Coordinates:

Fort Calhoun - Technical Department

Basic Function(s):

- (1) Coordinates the training requirements for all in-house and contract personnel in support of the recovery effort.
- (2) Develops out-of-normal operating and emergency procedures for plant operations personnel.

Primary Responsibilities:

- (1) Formulates, prepares, directs, administers, and schedules the training programs for recovery personnel during emergencies to assure they are properly trained in normal and out-of-normal plant operation and maintenance.
- (2) Ensure the recovery personnel are aware of safety and security systems and procedures in accordance with the Nuclear Regulatory Commission requirements.
- (3) Maintain the various training records in order to document the Recovery Organization training.
- (4) Provide the training equipment and facilities to effectively support the plant training needs.

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2.3.6 (Continued)

- (5) Organize his staff and establish a schedule of working hours to support the recovery effort.
- (6) Re-write existing operating and emergency procedures as required to reflect existing accident conditions.
- (7) Convert recovery plans into clear, concise, out-of-normal operating and emergency procedures for plant operations personnel.

Applicable Implementing Procedures:

EPIP-RR-23: "PROCEDURE/TRAINING SUPERVISOR"

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2.4 EMERGENCY RESPONSE COORDINATION GROUP

2.4.1 EMERGENCY COORDINATOR

Primary (Job Title):

Supervisor - Chemistry and Radiation Protection

Alternate (Job Title):

Supervisor - Nuclear and Chemical Services

Reporting Location:

Emergency Operations Facility

Reports To:

Recovery Manager

Supervises/Coordinates:

- (1) Dose Assessment Coordinator
- (2) Environmental Surveys & Analysis Coordinator
- (3) Radiochemical Analysis Coordinator
- (4) Dosimetry Coordinator
- (5) Site Representative

Basic Function(s):

Coordinates the facility's emergency plan with respect to off-site radiological assessment and interaction with the remainder of the emergency plan arrangements specific to his facility.

Primary Responsibilities:

- (1) Maintain control over personnel assembled at the Emergency Operations Facility.
- (2) Ensure on-site and off-site environmental and radiological monitoring teams are dispatched.
- (3) Establish communications with the Technical Support Center and Operations Support Center to obtain information on accident conditions, radiological releases, and prevailing meteorological conditions.
- (4) Maintain communications with designated off-site authorities and relate accident information necessary for these authorities to implement their emergency plans.

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2.4.1 (Continued)

Primary Responsibilities: (Continued)

- (5) Interpret all radiological data and provide updates to the Technical Support Center, Operations Support Center, and off-site authorities. Updates should include items such as projected radiological exposures, environmental survey results, recommended protective actions.
- (6) Provide for additional support upon request. This may range from additional radiological evaluations and equipment to providing medical assistance.
- (7) Receive any responding representatives from off-site emergency agencies and assist in their information and communications needs.
- (8) Ensure that personnel in the Emergency Operations Facility have adequate radiation protection considerations afforded them.
- (9) With the concurrence of the Recovery Manager, he will provide judgement on emergency radiation exposure doses for reentry operation based on guidelines set forth in Section M.3.4.
- (10) Provide input to Recovery Manager and Plant Operations Manager regarding relaxation/curtailment of Recovery Organization duties.
- (11) Coordinates the efforts of the Emergency Reentry Team members assigned Tags 2, 2A, 3 and 3A with the Health Physics/Chemistry Supervisor of the Plant Operations Group.

Applicable Implementing Procedures:

EPIE-RR-24: "EMERGENCY COORDINATOR"

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2.4.2 DOSE ASSESSMENT COORDINATOR

Primary (Job Title):

Senior Engineer - Technical Services

Alternate (Job Title):

Health Physicist

Reporting Location:

Emergency Operations Facility

Reports To:

Emergency Coordinator

Supervises/Coordinates:

N/A

Basic Function(s):

Provide an estimated whole body and/or thyroid dose for the population at any selected point of interest.

Primary Responsibilities:

- (1) Coordinates with Security and Technical Administrative Support Coordinator and Health Physics/Chemistry Supervisor in order to assimilate and record all radiological and meteorological data.
- (2) Perform the following assessments:
 - (a) Estimated airborne activity (any selected point).
 - (b) Estimated whole body dose (any selected point).
 - (c) Estimated thyroid dose (any selected point).
- (3) Provide updated maps and charts showing dose/dose rate estimates at various points from the site.
- (4) Keeps the Emergency Coordinator informed on changing events.
- (6) Coordinates the duties of the Emergency Team personnel assigned to Tags 4 and 4A and incorporates these functions into the Recovery Organization.

Applicable Implementing Procedures:

EPIP-RR-23: "DOSE ASSESSMENT COORDINATOR"

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2.4.3 ENVIRONMENTAL SURVEY & ANALYSIS COORDINATOR

Primary (Job Title):

Manager - Chemical & Environmental Technical Services

Alternate (Job Title):

Supervisor - Environmental Science

Reporting Location:

Emergency Operations Facility

Reports To:

Emergency Coordinator

Supervises/Coordinates:

Chemical & Environmental Technical Services Department

Basic Function(s):

Provides for environmental sampling and testing in areas affected by radiological releases to ensure public health and safety are not jeopardized.

Primary Responsibilities:

- (1) Organize his staff and establish a schedule of working hours to support the recovery effort.
- (2) Determine the sector affected by the plant radiological release and assign personnel to that area.
- (3) Oversee the collection of environmental samples in affected areas and ensure the analysis is being performed by the contractor laboratory. Normal samples obtained are:
 - (a) Air samples
 - (b) Milk samples
 - (c) TLD badges
 - (d) Surface water samples
- (4) Determine if the sample results are out-of-normal by using previously analyzed routine samples as baseline.

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2.4.3 (Continued)

- (5) Log all results and provide information emphasizing changes to Emergency Coordinator on an updated basis.
- (6) Collects all on-site and off-site environmental TLD's and ensures they are transported to the Dosimetry Coordinator or contractor laboratory.

Applicable Implementing Procedures:

EPIP-RR-26: "ENVIRONMENTAL SURVEY & ANALYSIS
COORDINATOR"

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2.4.4 RADIOCHEMICAL ANALYSIS COORDINATOR

Primary (Job Title):

Chemist - Fort Calhoun

Alternate (Job Title):

Supervisor - Chemical Services

Reporting Location:

Emergency Operations Facility

Reports To:

Emergency Coordinator

Supervises/Coordinates:

Plant Monitoring Teams

Basic Function(s):

Coordinates the acquisition of radiological information required by Emergency Coordinator in order to make sound recommendations to ensure the health and safety of the public.

Primary Responsibilities:

- (1) Establishes a schedule of working hours to support the recovery effort.
- (2) Ensures field monitoring teams are adequately equipped and trained.
- (3) Ensures that all iodine and particulate airborne samples are being performed and documented.
- (4) Ensures that all on-site and off-site radiation and contamination readings are being performed and documented.
- (5) Maintain complete operational status of the stationary radiochemistry lab to ensure accurate sample analysis.
- (6) Provide radiological input to the Dose Assessment Coordinator, and Radiological Assessment Coordinator when requested.
- (7) Coordinates the Emergency Team personnel assigned Tags 5, 6, 7, 8, 9, 9A, 10, 10A, 15, and incorporates these individuals into the Recovery Organization.

Applicable Implementing Procedures:

EPIP-RR-27: "RADIOCHEMICAL ANALYSIS COORDINATOR"

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2.4.5 DOSIMETRY COORDINATOR

Primary (Job Title):

Supervisor - Reactor Performance Analysis

Alternate (Job Title):

Engineer - Reactor & Computer Technical Services

Reporting Location:

Production Operations Division Headquarters

Reports To:

Emergency Coordinator

Supervises/Coordinates:

TLD Analysis Technician

Basic Function(s):

Provide timely and accurate reporting of personnel radiation exposure to members of the Recovery Organization.

Primary Responsibilities:

- (1) Organize his staff and establish a schedule of working hours to support the Recovery Organization in issuing and reading TLD's.
- (2) Coordinates the transportation of TLD's to and from the Production Operations Division Headquarters.
- (3) Ensure personnel TLD's are read and exposure history files are updated in a timely manner.
- (4) Ensure environmental TLD's are read and accurately logged with information supplied to the dose assessment team, Emergency Coordinator, Radiological Assessment Representatives, and any other requesting organization.

Applicable Implementing Procedures:

EPIP-RR-28: "DOSIMETRY COORDINATOR"

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2.4.6 SITE REPRESENTATIVE

Primary (Job Title):

QA Engineer

Alternate (Job Title):

QA Engineer

Reporting Location:

Iowa EOC at Council Bluffs

Reports To:

Emergency Coordinator by telephone communication

Supervises/Coordinates:

Coordinates with the Governor's EOC Representative

Basic Function(s):

Assures technical accuracy and interpretation of information transmitted from OPPD EOF to State EOC.

Primary Responsibilities:

- (1) Maintain communications with the Emergency Coordinator at the EOF
- (2) Requests information regarding plant status, radiological releases and protective actions taken.
- (3) Assures technical accuracy of information received from the EOF prior to release of this information to the State EOC Representative.

Applicable Implementing Procedures:

EPIP-RR-61: "SITE REPRESENTATIVE"

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2.5 ADMINISTRATIVE LOGISTICS GROUP

2.5.1 ADMINISTRATIVE LOGISTICS MANAGER

Primary (Job Title):

Manager - Administrative Services

Alternate (Job Title):

Division Manager - Environmental & Regulatory Affairs

Reporting Location:

Emergency Operations Facility

Reports To:

Recovery Manager

Supervises/Coordinates:

- (1) Administrative Support Coordinator
- (2) Finance Coordinator
- (3) Accommodations Support Coordinator
- (4) Commissary Support Coordinator
- (5) Communications Support Coordinator
- (6) Human Resources Coordinator
- (7) Material Management Coordinator
- (8) Transportation Coordinator
- (9) Accounting Coordinator

Basic Function(s):

Provides administrative, logistics, communications, and personnel support for the Recovery Organization.

Primary Responsibilities:

- (1) Organize his staff and establish a schedule of working hours to support the recovery effort.
- (2) Oversees the operation of the Administrative Logistics Group to ensure the following commitments to the Recovery Organization:
 - (a) Providing administrative support in areas of typing, reproduction, office supplies, furniture, and special services.
 - (b) Providing for short and long-term financing.

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2.5.1 (Continued)

- (c) Providing motel, airline, and trailer arrangements.
 - (d) Providing food handling services.
 - (e) Providing communications services.
 - (f) Providing the manpower needs.
 - (g) Provision for material procurement and control.
 - (h) Providing transportation services.
 - (i) Providing clerical and accounting services.
 - (j) Assist Recovery Organization Managers/Coordinators in expediting priority items identified by them.
- (3) Initiates full Recovery Organization notification.

Applicable Implementing Procedures:

EPIP-RR-29: "ADMINISTRATIVE LOGISTICS MANAGER"

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2.5.2 ADMINISTRATIVE SUPPORT COORDINATOR

Primary (Job Title):

Manager - Office Systems

Alternate (Job Title):

Supervisor - Word Processing

Reporting Location:

Production Operations Division Headquarters

Reports To:

Administrative Logistics Manager

Supervises/Coordinates:

Office Systems Departmental Personnel

Basic Function(s):

- (1) Provide general office support functions including typing, reproduction, office supplies, and furniture.
- (2) Provide special items and services such as area maps and photography services.

Primary Responsibilities:

- (1) Organize his staff and establish a schedule of working hours to support the recovery effort.
- (2) Provide typing and copying services required to support the recovery effort.
- (3) Fill special requests in areas such as photography services, providing facility and area maps, etc.
- (4) Provide office supplies, furniture, and reproduction equipment to members of the Recovery Organization upon request.

Applicable Implementing Procedures:

EPIP-RR-30: "ADMINISTRATIVE SUPPORT COORDINATOR"

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2.5.3 FINANCE COORDINATOR

Primary (Job Title):

Manager - Treasury

Alternate (Job Title):

Supervisor - Cash Management & Analysis

Reporting Location:

Electric Building

Reports To:

Administrative Logistics Manager

Supervises/Coordinates:

Cash Management & Analysis Department

Basic Function(s):

To develop, review, and administer plans and guidance for short and long-term financing needed to support the recovery effort.

Primary Responsibilities:

- (1) Organize his staff and establish a schedule of working hours to support the recovery effort.
- (2) Assures a timely payment of financial obligations incurred by accounting and material management.
- (3) Initiates, maintains, and upgrades petty cash funds for various members of the Recovery Organization.
- (4) Provides for the distribution of restaurant drafts should commissary facilities not be available.

Applicable Implementing Procedures:

EPIP-RR-31: "FINANCE COORDINATOR"

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2.5.4 ACCOMMODATIONS SUPPORT COORDINATOR

Primary (Job Title):

Division Manager - Employee Relations

Alternate (Job Title):

Manager - Safety

Reporting Location:

Law Building

Reports To:

Administrative Logistics Manager

Supervises/Coordinates:

Employee Relations Department

Basic Function(s):

Make necessary motel, airline, and trailer arrangements for the Recovery Organization.

Primary Responsibilities:

- (1) When requested by organizations supporting the recovery effort, he will make the necessary airline accommodations for both personnel and special equipment.
- (2) Provide motel reservations for supporting organizations, e.g., suppliers, NRC, etc.
- (3) Provide for the rental and locating of trailers needed by various vendors and contractors.

Applicable Implementing Procedures:

EPIP-RR-32: "ACCOMMODATIONS SUPPORT COORDINATOR"

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2.5.5 COMMISSARY SUPPORT COORDINATOR

Primary (Job Title):

Manager - Employee Benefits & Services

Alternate (Job Title):

Manager - General Services

Reporting Location:

Law Building

Reports To:

Administrative Logistics Manager

Supervises/Coordinate:

General Services Department

Basic Function(s):

Provide the needed food handling services to support the Recovery Organization.

Primary Responsibilities:

- (1) Organize his staff and establish a schedule of working hours to support an around-the-clock recovery effort.
- (2) Determine the best locations and establish field kitchens to support the recovery effort.
- (3) Where food handling facilities are not available, provide for food deliveries.
- (4) Provide adequate sanitation facilities including trash disposal.

Applicable Implementing Procedures:

EPIP-RR-33: "COMMISSARY SUPPORT COORDINATOR"

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2.5.6 COMMUNICATIONS SUPPORT COORDINATOR

Primary (Job Title):

Manager - Communications

Alternate (Job Title):

Field Supervisor - Communications

Reporting Location:

Electric Operations Building

Reports To:

Administrative Logistics Manager

Supervises/Coordinates:

Communications Department

Basic Function(s):

Meet the telephone and special communications requirements necessary for the Recovery Organization to function.

Primary Responsibilities:

- (1) Organize his staff and establish a schedule of working hours to support the Recovery Organization.
- (2) Provide telephone requirements for all members of the Recovery Organization and outside support groups.
- (3) Provide special communication requirements such as mobile radio systems.
- (4) Maintain an updated call list for all members of the Recovery Organization. The list should include on and off duty telephone numbers.
- (5) Request outside assistance in the event his department is overburdened with requests.

Applicable Implementing Procedures:

EPIP-RR-34: "COMMUNICATIONS SUPPORT COORDINATOR"

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2.5.7 HUMAN RESOURCES COORDINATOR

Primary (Job Title):

Manager - Employment & Compensation

Alternate (Job Title):

Supervisor - Employment

Reporting Location:

Law Building

Reports To:

Administrative Logistics Manager

Supervises/Coordinates:

Employment and Compensation Department

Basic Function(s):

Provide the Recovery Organization's manpower needs in the areas of clerical, technical, and craft disciplines.

Primary Responsibilities:

- (1) Organize his staff and establish a schedule of working hours to support the recovery effort.
- (2) Provide the additional clerical, technical and craft disciplines to meet the Recovery Organization's needs.
- (3) Ensure compliance with all civil rights, compensation and labor relations laws.

Applicable Implementing Procedures:

EPIP-RR-35: "HUMAN RESOURCES COORDINATOR"

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2.5.8 MATERIAL MANAGEMENT COORDINATOR

Primary (Job Title):

Division Manager - Material Management

Alternate (Job Title):

General Stores & Supplies Specialist

Reporting Location:

Electric Building

Reports To:

Administrative Logistics Manager

Supervises/Coordinates:

Material Management Division

Basic Function(s):

Represents the Recovery Organization as purchasing agent responsible for contract negotiations/administration and material control.

Primary Responsibilities:

- (1) He must mobilize the Material Management Division to provide timely and adequate support for the Recovery Organization.
- (2) Provide additional emergency purchase orders to the Recovery Manager or designated alternate to ensure rapid procurement of needed equipment.
- (3) Directs the purchasing and controls the payment authorization for all general stores, supplies, equipment, and services required by the Recovery Organization.
- (4) Provides adequate coordination of activities regarding material and construction contracts to assure compliance with state and federal statutes, as well as utility bidding procedures and contractual agreements.
- (5) Oversee the development and implementation of procedures to handle inventory control and documentation, purchase orders, invoices, and timely delivery schedules.

Applicable Implementing Procedures:

EPIP-RR-36: "MATERIAL MANAGEMENT COORDINATOR"

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2.5.9 TRANSPORTATION COORDINATOR

Primary (Job Title):

Manager - Transportation & Construction Equipment

Alternate (Job Title):

Field Supervisor - Transportation

Reporting Location:

Electric Operations Building

Reports To:

Administrative Logistics Manager

Supervises/Coordinates:

Transportation Department

Basic Function(s):

Provide the necessary transportation to support the Recovery Organization.

Primary Responsibilities:

- (1) Organize his staff and establish a schedule of working hours to support the Recovery Organization.
- (2) Provide motor vehicles for the Recovery Organization.
- (3) Ensure that a shuttle service is maintained between Eppley Field and surrounding motels.
- (4) Supply special transportation such as helicopters, buses, etc. needed to support the recovery effort.
- (5) Procure rental vehicles in the event of a shortage of utility owned vehicles.

Applicable Implementing Procedures:

EPIP-RR-37: "TRANSPORTATION COORDINATOR"

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2.5.10 ACCOUNTING COORDINATOR

Primary (Job Title):

Division Manager - Accounting

Alternate (Job Title):

Manager - Corporate Accounting

Reporting Location:

Electric Building

Reports To:

Administrative Logistics Manager

Supervises/Coordinates:

Accounting Division

Basic Function(s):

Oversee the maintenance of all accounting records necessary to support the Recovery Organization.

Primary Responsibilities:

- (1) Mobilize the Accounting Division to provide timely and adequate support for the Recovery Organization.
- (2) Supports the payroll accounting function through verifying employee pay records and preparation of payroll for all utility permanent and temporary recovery personnel in accordance with established policies and applicable state and federal laws.
- (3) Establishes and maintains expense accounts for all recovery support groups as required.
- (4) Administer, monitor, and process for payment all vendor and construction contract invoices and billings to assure that payment is made in accordance with contract provisions.

Applicable Implementing Procedures:

EPIP-RR-38: "ACCOUNTING COORDINATOR"

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2.6 EMERGENCY NEWS GROUP

2.6.1 EMERGENCY NEWS CENTER COORDINATOR

Primary (Job Title):

Division Manager - Public Relations

Alternate (Job Title):

Media Relations Manager

Reporting Location:

Emergency News Center

Reports To:

Recovery Manager

Supervises/Coordinates:

Public Information and Rumor Control Supervisor

Clerical Supervisor

Information Specialist (EOF & ENC)

Technical Liaisons (EOF & ENC)

Internal Services Coordinator

Basic Function(s):

Serves as the single point interface in the area of press releases.

Primary Responsibilities:

- (1) He is the official source of OPPD's statements to the media.
- (2) Ensure that all statements to the media are technically correct.
- (3) Coordinates all plant related news releases with the Recovery Manager, Local, State, and Federal Officials.
- (4) Ensures that the Recovery Manager periodically attends press conferences in order to address technical questions and provide information on official recovery operation judgements.

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2.6.1 (Continued)

- (5) Authorize the preparation of any taped messages that may require broadcasting (coordinated with State officials).
- (6) Ensure that no company employees make statements to the media that are not consistent with those made by the company spokesman (rumor control).
- (7) Serves as the senior representative at the Emergency News Center.

Applicable Implementing Procedures:

EPIP-RR-39: "EMERGENCY NEWS CENTER COORDINATOR"

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2.6.2 EOF INFORMATION SPECIALIST

Primary (Job Title):

Media Relations Manager

Alternate (Job Title):

Public Relations Assistant 2

Reporting Location:

Emergency Operations Facility

Reports To:

Emergency News Center Coordinator

Supervises/Coordinates:

Coordinates with State Information Officers and the Recovery Manager at the EOF regarding plant status information.

Basic Function(s):

Coordinates all significant plant information for transmittal to the Emergency News Center.

Primary Responsibilities:

- (1) Maintain communications with the Division Information Office and the Emergency News Center.
- (2) Coordinates activities with State Information Officers to ensure they receive prompt and accurate plant information.
- (3) Gather information as it becomes available and evaluate its significance in conjunction with the EOF Technical Liaison and Emergency Coordinator.
- (4) Verify technical accuracy and transmit significant plant information to Emergency News Center for final review and release to the news media.
- (5) Serve as plant information source for the rumor control center.
- (6) Maintain a written or taped time log of significant reporting activities.
- (7) Perform duties assigned to Emergency Team Member 23.

Applicable Implementing Procedures:

EPIP-RR-40: "EOF INFORMATION SPECIALIST"

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2.6.3 EOF TECHNICAL LIAISON

Primary (Job Title):

Engineer - Fort Calhoun

Alternate (Job Title):

Engineer - Fort Calhoun

Reporting Location:

Emergency Operations Facility

Reports To:

Emergency News Center Coordinator

Supervises/Coordinates:

N/A

Basic Function(s):

Assure the technical accuracy of all press releases prior to transmittal to the Emergency News Center.

Primary Responsibilities:

- (1) Monitor status of emergency and assist Information Specialist in collecting and interpreting nuclear related data.
- (2) Review release material for technical accuracy before it is transmitted to the Emergency News Center.
- (3) Assist Information Specialist in providing prompt and accurate plant information to state and local public information personnel.
- (4) Perform duties assigned to Emergency Team 24.

Applicable Implementing Procedures:

EPIP-RR-41: "EOF TECHNICAL LIASON"

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2.6.4 ENC INFORMATION SPECIALIST

Primary (Job Title):

Manager - Publications

Alternate (Job Title):

Public Relations Assistant 3

Reporting Location:

Emergency News Center

Reports To:

Emergency News Center Coordinator

Supervises/Coordinates:

N/A

Basic Function(s):

Assist the Emergency News Center Coordinator in preparing news releases.

Primary Responsibilities:

- (1) Prepare written news releases in accordance with procedures.
- (2) Prepare audio tapes for broadcast.
- (3) Assist with news conferences and briefings as directed by the Emergency News Center Coordinator.
- (4) Make arrangements for taping telecasts concerning the emergency.

Applicable Implementing Procedures:

EPIP-RR-42: "ENC INFORMATION SPECIALIST"

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2.6.5 ENC TECHNICAL LIAISON

Primary (Job Title):

Manager - Energy Conservation

Alternate (Job Title):

Nuclear Fuel Engineer

Reporting Location:

Emergency News Center

Reports To:

Emergency News Center Coordinator

Supervises/Coordinates:

N/A

Basic Function(s):

Assure technical accuracy of press releases.

Primary Responsibilities:

- (1) Assist the District's designated spokesman in the interpretation and evaluation of nuclear related information.
- (2) Assist the Emergency News Center Coordinator and Information Specialist in checking releases for technical accuracy.
- (3) Maintain communications with the EOF Technical Liaison.
- (4) Participate in technical briefings for media as directed.
- (5) Serve as technical information source for Rumor Control Center.

Applicable Implementing Procedures:

EPIP-RR-43: "ENC TECHNICAL LIAISON"

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2.6.6 PUBLIC INFORMATION & RUMOR CONTROL SUPERVISOR

Primary (Job Title):

Manager - Public Information

Alternate (Job Title):

Public Relations Assistant 1

Reporting Location:

Emergency News Center

Reports To:

Emergency News Center Coordinator

Supervises/Coordinates:

Public Information Specialists

Basic Function(s):

Establish a telephone center for responding to public questions with reliable, accurate, and timely information concerning the emergency. Also, provide timely and reliable information to District employees in a further effort to control rumors.

Primary Responsibilities:

- (1) Set up and staff Rumor Control Telephone Center and coordinate its activities with state and local information officers.
- (2) Prepare and distribute periodic employee information bulletins as directed by the Emergency News Center Coordinator.
- (3) Assist the Emergency News Center Coordinator in keeping key public officials informed of plant developments.
- (4) Provide personnel to man telephones and provide prompt and accurate information to citizen callers.
- (5) Ensure that a record of calls is being maintained using approved forms.

Applicable Implementing Procedures:

EPIP-RR-44: "PUBLIC INFORMATION & RUMOR CONTROL SUPERVISOR"

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2.6.7 CLERICAL SUPERVISOR

Primary (Job Title):

Secretary 2

Alternate (Job Title):

Stenographer 1

Reporting Location:

Emergency News Center

Reports To:

Emergency News Center Coordinator

Supervises/Coordinates:

Clerical Staff

Basic Function(s):

Provide clerical services for the Emergency News Center.

Primary Responsibilities:

- (1) Contact the Administrative Logistic Manager for providing a court reporter as well as clerical and security personnel.
- (2) Set up clerical center and supervise staffing and equipping.
- (3) Arrange for recording, transcribing, reproducing and distributing transcripts of all official news briefings and news conferences.
- (4) Supervise final reproduction and distribution of written news releases and employee information bulletins.
- (5) Maintain a complete file, including time and date, of all information processed through the clerical center.

Applicable Implementing Procedures:

EPIP-RR-45: "CLERICAL SUPERVISOR"

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2.6.8 INTERNAL SERVICES COORDINATOR

Primary (Job Title):

Manager - Printing Services

Alternate (Job Title):

Senior Print Machine Technician

Reporting Location:

Emergency News Center

Reports To:

Emergency News Center Coordinator

Supervises/Coordinates:

Security and Messenger Personnel

Basic Function(s):

Coordinates with the Administrative Logistics Group to provide equipment and services to support the Emergency News Center.

Primary Responsibilities:

- (1) Coordinates with the Administrative Logistics Group to obtain such services as, additional communications equipment, security and messenger personnel, office equipment and supplies.
- (2) Supervise activities of security and messenger personnel.

Applicable Implementing Procedures:

EPIP-RR-46: "INTERNAL SERVICES COORDINATOR"

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2.7 DESIGN & CONSTRUCTION GROUP

2.7.1 DESIGN & CONSTRUCTION MANAGER

Primary (Job Title):

Division Manager - Engineering

Alternate (Job Title):

Section Manager - Generating Station Engineering

Reporting Location:

Corporate Headquarters

Reports To:

Recovery Manager

Supervises/Coordinates:

- (1) Utility Engineering Director
- (2) Architect Engineering Director
- (3) Director of Nuclear Steam Supply System
- (4) Director of Construction
- (5) Construction Quality Assurance Director

Basic Function(s):

Coordinates the design and construction activities of the utility, architect engineer, NSSS supplier, construction forces, and vendors needed to support the recovery effort.

Primary Responsibilities:

- (1) Provide the direct contact between the utility, architect engineer, NSSS supplier, and constructor on administrative matters.
- (2) Determine the need for and provide engineering and technical specialists assigned on a preplanned basis to the Technical Support, Plant Operations, Waste Management, and Emergency Coordinator if required. Be prepared to provide additional support as needed.
- (3) Assure that the design and construction activities are adequately staffed and equipped.
- (4) Coordinate with the Administrative Logistics Manager to ensure proper facilities are available to support the Design and Construction Group.

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2.7.1 (Continued)

- (5) Direct, coordinate, and approve other engineering design and construction activities on-site.
- (6) Establish which engineering, design, and construction activities, if any, shall conform to utility formal requirements or be documented by utility quality assurance procedures.

Applicable Implementing Procedures:

EPIP-RR-47: "DESIGN & CONSTRUCTION MANAGER"

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2.7.2 UTILITY ENGINEER DIRECTOR

Primary (Job Title):

Manager - Mechanical Engineering

Alternate (Job Title):

Manager - Nuclear Engineering

Reporting Location:

Production Operations Division Headquarters

Reports To:

Design and Construction Manager

Supervises/Coordinates:

Utility Engineering Staff

Basic Function(s):

Coordinates the utility engineering staff in performing such engineering and design functions that may be necessary to support the recovery operation.

Primary Responsibilities:

- (1) Responsible for the conceptual design of systems and equipment to support waste processing needs in order to reduce plant and off-site dose rates.
- (2) Organize his staff and establish a schedule of working hours to support the recovery effort.
- (3) Establish for the Design & Construction Manager which engineering, design, and construction activities, if any, shall conform to the utility formal technical requirements. He will accomplish this by interfacing his utility staff with those of the Architect Engineering Director, Director of Nuclear Steam Supply System and Director of Construction.

Applicable Implementing Procedures:

EPIP-RR-48: "UTILITY ENGINEER DIRECTOR"

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2.7.3 ARCHITECT ENGINEER DIRECTOR

Primary (Job Title):

Project Manager - Stone & Webster

Alternate (Job Title):

Project Engineer - Stone & Webster

Reporting Location:

Production Operations Division Headquarters (upon request)
Emergency Operations Facility for Advisory Support Group
meetings

Reports To:

Design & Construction Manager

Supervises/Coordinates:

Architect-Engineering Staff

Basic Function(s):

Direct and administratively control the Architect Engineer's staff to support the requirements of the recovery operation.

Primary Responsibilities:

- (1) Provide the contact between the Architect Engineer and the Utility on technical and administrative matters.
- (2) Act as a member of the Advisory Support Group.
- (3) Be prepared to provide engineering and technical specialists to various groups within the Recovery Organization.
- (4) Ensure both on-site and home-office engineering and design functions are adequately staffed to provide timely support.
- (5) Direct, coordinate, and approve engineering and design tasks assigned by the Design & Construction Manager.
- (6) Coordinate the work of suppliers providing components and service in support of the recovery effort.

Applicable Implementing Procedures:

EPIP-RR-49: "ARCHITECT ENGINEER DIRECTOR"

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2.7.4 DIRECTOR OF NUCLEAR STEAM SUPPLY SYSTEM

Primary (Job Title):

Project Manager - Combustion Engineering, Inc.

Alternate (Job Title):

Project Engineer - Combustion Engineering, Inc.

Reporting Location:

Production Operations Division Headquarters (upon request)
Emergency Operations Facility for Advisory Support Group
meetings

Reports To:

Design & Construction Manager

Supervises/Coordinates:

NSSS Supplier's Staff

Basic Function(s):

Directs and administratively controls the NSSS supplier's staff to support the requirements of the recovery operation.

Primary Responsibilities:

- (1) Provide contact between the NSSS supplier and the utility on technical and administrative matters.
- (2) Acts as a member of Advisory Support Group as primary Advisory Support Coordinator.
- (3) Be prepared to provide engineering and technical specialists to various groups in the Recovery Organization.
- (4) Ensure both on-site and home-office engineering and design functions are adequately staffed to provide timely support.
- (5) Direct, coordinate, and approve engineering and design tasks assigned by the Design & Construction Manager.
- (6) Coordinate the work of suppliers providing components and services for the NSSS organization.

Applicable Implementing Procedures:

EPIP-RR-50: "DIRECTOR NUCLEAR STEAM SUPPLY SYSTEM"

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2.7.5 DIRECTOR OF CONSTRUCTION

Primary (Job Title):

Manager - Construction Management

Alternate (Job Title):

Manager - Civil Engineering

Reporting Location:

Production Operations Division Headquarters

Reports To:

Design & Construction Manager

Supervises/Coordinates:

Construction Forces

Basic Function(s):

Direct and administratively control all construction forces and their subcontractors performing such construction tasks to meet the requirements of the recovery operation.

Primary Responsibilities:

- (1) Provide direct contact between the utility and the constructor on all administrative and construction matters.
- (2) Direct, coordinate, and approve all construction tasks assigned by the Design & Construction Manager.
- (3) Assure that all construction forces are adequately manned and equipped to provide timely construction support.
- (4) Coordinate the work of suppliers and/or subcontractors providing construction materials and/or services.
- (5) Coordinate with Administrative Logistics Group in areas of material management, labor relations, etc.

Applicable Implementing Procedures:

EPIP-RR-51: "DIRECTOR OF CONSTRUCTION"

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2.7.6 CONSTRUCTION QUALITY ASSURANCE DIRECTOR

Primary (Job Title):

Construction QA Engineer

Alternate (Job Title):

Operations QA Engineer

Reporting Location:

Production Operations Division Headquarters

Report To:

Design & Construction Manager

Supervises/Coordinates:

Construction Quality Assurance Inspectors

Basic Function(s):

Provide direction and administrative control of the Construction Quality Assurance Inspection staff and the contractor QA/QC program for such construction tasks as the Design & Construction Manager may direct to meet the requirements of the recovery operation.

Primary Responsibilities:

- (1) Provide the direct contact between the Utility Quality Assurance Manager and the contractor QA/QC staff on all administrative and technical matters.
- (2) Assures that the contractor QA/QC activity is adequately staffed and equipped to provide timely support.
- (3) Direct and coordinate the implementation of the contractor QA/QC program for approved construction tasks.

Applicable Implementing Procedures:

EPIP-RR-52: "CONSTRUCTION QUALITY ASSURANCE DIRECTOR"

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2.8 WASTE MANAGEMENT GROUP

2.8.1 MANAGER OF WASTE MANAGEMENT

Primary (Job Title):

Supervisor - Mechanical Technical Services

Alternate (Job Title):

Engineer - Fort Calhoun

Reporting Location:

Technical Support Center

Reports To:

Recovery Manager

Supervises/Coordinates:

Radwaste/Technical Support Coordinator

Basic Function(s):

Oversees the development of plans and procedures to process and control liquid, gaseous, and solid wastes in a manner consistent with the Recovery Organization objectives and to minimize the effects on the health and safety of the public.

Primary Responsibilities:

- (1) In conjunction with System Analysis/Procedure Support Coordinator develop plans and procedures for sampling and processing liquid, gaseous, and solid wastes.
- (2) Coordinate with the Design and Construction Manager on the development of modifications to plant waste systems and the conceptual designs of new systems and equipment.
- (3) Approve schedules and priorities for tasks assigned to the Waste Management Group.
- (4) Coordinate plans and schedules for tasks affecting other managers/coordinators in of the Recovery Organization.

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2.8.1 (Continued)

- (5) Provide information and recommendations to the Recovery Manager concerning future operations that could affect the plant or the environment.
- (6) Evaluate the need for temporary storage facilities, mobile waste processing unit, specialized shipping containers, and make recommendations to the Recovery Manager.
- (7) Ensure all waste shipments are fully authorized and documented.
- (8) Coordinate with the Health Physics/Chemistry Supervisor concerning health physics coverage during radwaste operations.

NOTE: The Manager of Waste Management may perform other emergency functions by the nature of the emergency condition.

Applicable Implementing Procedures:

EP-IP-RR-53: "MANAGER OF WASTE MANAGEMENT"

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2.8.2 RADWASTE/TECHNICAL SUPPORT COORDINATOR

Primary (Job Title):

Engineer - Technical Services

Alternate (Job Title):

Engineer - Technical Services

Reporting Location:

Technical Support Center

Reports To:

Manager of Waste Management

Supervises/Coordinates:

Technical Services Personnel

Basic Function(s):

Develop a conceptual design into plans and procedures needed to process liquid, gaseous, and solid wastes in order to minimize on-site and off-site dose rates.

Primary Responsibilities:

- (1) Coordinate with Health Physics/Chemistry Supervisor and System Analysis/Procedure Support Coordinator and develop decontamination plan to support the recovery effort.
- (2) Develops long and short term plans and procedures to reduce liquid, gaseous, and solid waste levels to near normal status.
- (3) Maintain an updated status of liquid storage tank volumes, gas and solid waste system volumes.
- (4) Recommend equipment for use in accomplishing waste processing and monitoring activities.
- (5) Advise the Design & Const-uction Group on radwaste system additions and modifications.

NOTE: The Radwaste/Technical Support Coordinator may perform other emergency functions when this position is not required by the nature of the emergency condition.

Applicable Implementing Procedures:

EPIP-RR-54: "RADWASTE/TECHNICAL SUPPORT COORDINATOR"

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2.9 SCHEDULING/PLANNING GROUP

2.9.1 SCHEDULING/PLANNING MANAGER

Primary (Job Title):

Section Manager - Engineering Services

Alternate (Job Title):

Manager - Scheduling & Budgets

Reporting Location:

Emergency Operations Facility

Reports To:

Recovery Manager

Supervises/Coordinates:

Scheduling and Budgets Department

Basic Function(s):

Provide the requisite scheduling and cost control services for planning, engineering, design, construction, and system modifications needed to support the recovery operation..

Primary Responsibilities:

- (1) Organize his staff and establish a schedule of working hours to support the Recovery Manager and his organization.
- (2) Develop the agenda for recovery staff meetings and follow up with expeditious scheduling and budget revisions to support plans developed at these meetings.
- (3) Assist the Recovery Manager in short-term planning and scheduling to expedite the recovery operation. This will require the optimization of all available material, equipment, manpower, and capital resources.
- (4) Monitors consultant scheduling where outside utility assistance is being provided.
- (5) Coordinates with the Systems Analysis/Procedure Support Coordinator, I&C Support Coordinator, Material Management Coordinator and members of the Design & Construction Group to obtain information so as to regularly update the schedule and cost control data, inputting current data to produce a revised schedule and cost control information using digital computer programs and services.

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2.9.1 (Continued)

- (6) He will post updated plans, schedules, and cost control data in an area that is readily available to the recovery staff.

Applicable Implementing Procedures:

EPIP-RR-55: "SCHEDULING/PLANNING MANAGER"

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2.10 ADVISORY SUPPORT GROUP

2.10.1 ADVISORY SUPPORT COORDINATOR

Primary (Job Title):

Project Manager - Combustion Engineering, Inc.

Alternate (Job Title):

Vice President - Gibbs & Hill, Inc. (Omaha Office)

Reporting Location:

Emergency Operations Facility

Reports To:

Recovery Manager

Supervises/Coordinates:

- (1) NRC and FEMA Representatives
- (2) Nuclear Fuel Supplier Representative (Exxon Nuclear)
- (3) Architect Engineering Representative (Gibbs & Hill)
- (4) Architect Engineering Representative (Pickard, Lowe & Garrick)
- (5) Architect Engineering Representative (Stone & Webster)
- (6) NSSS Representative (Combustion Engineering Inc.)
- (7) Dose Assessment Representative (Pickard, Lowe & Garrick)

Basic Function(s):

Coordinate the activities of Senior Management personnel responding to the recovery effort who have the authority to represent their respective organizations to ensure that technical issues and resource commitments are resolved.

Primary Responsibilities:

- (1) Coordinate the Advisory Support Group and determine what assistance is required and who will provide the expertise.
- (2) Provide space for these representatives at the Emergency Operations Facility.
- (3) Coordinate with the Administrative Logistics Manager to provide any administrative services that may be required.

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2.10.1 (Continued)

- (4) If required, incorporate members of the Advisory Support Group into other Recovery Organizational functions to which their expertise would be invaluable.

Applicable Implementing Procedures:

EPIP-RR-56: "ADVISORY SUPPORT COORDINATOR"

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2.10.2 NRC & FEMA REPRESENTATIVES

Personnel Assignment:

14 - NRC Representatives
1 - FEMA Representative

Reporting Location:

Emergency Operations Facility - 9 NRC Representatives
Emergency Operations Facility - 1 FEMA Representative
Technical Support Center - 5 NRC Representatives

Additional Information will be provided upon receipt of a fully developed NRC Emergency Response Plan.

Applicable Implementing Procedures:

EPIP-RR-62: "NRC & FEMA REPRESENTATIVES"

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2.10.3 NUCLEAR FUEL SUPPLIER REPRESENTATIVE

Primary (Job Title):

Senior Engineer - Exxon Nuclear

Alternate (Job Title):

Senior Engineer - Exxon Nuclear

Reporting Location:

Emergency Operations Facility (upon request)

Reports To:

Advisory Support Coordinator

Supervises/Coordinates:

Nuclear Fuel Supplier's Staff

Basic Function(s):

Provide support to the Recovery Manager and his staff in areas of organizational commitment and resolution of technical issues.

Primary Responsibilities:

- (1) Attendance at Advisory Support meetings to act as the nuclear fuel supplier's contact on technical and administrative matters.
- (2) Be prepared to commit his company's engineering, technical, and manufacturing resources in order to support a recovery effort.
- (3) Coordinate his company's on-site activities.

Applicable Implementing Procedures:

EPIP-RR-57: "NUCLEAR FUEL SUPPLIER REPRESENTATIVE"

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2.10.4 ARCHITECT ENGINEERING REPRESENTATIVE (GIBBS & HILL)

Primary (Job Title):

Vice President (Omaha Office)

Alternate (Job Title):

Senior Engineer

Reporting Location:

Emergency Operations Facility (upon request)

Reports To:

Advisory Support Coordinator

Supervises/Coordinates:

Gibbs & Hill's Support Staff

Basic Function(s):

Provide support to the Recovery Manager and his staff in areas of organizational commitment and resolution of technical issues.

Primary Responsibilities:

- (1) Attendance at Advisory Support meetings to act as the Gibbs & Hill contact regarding technical and administrative matters.
- (2) Be prepared to commit his company's engineering and technical resources in order to support a recovery effort.
- (3) Coordinates his company's on-site activities.
- (4) Acts as alternate for the position of Advisory Support Coordinator.

Applicable Implementing Procedures:

EP-IP-RR-58: "ARCHITECT ENGINEERING REPRESENTATIVE
(GIBBS & HILL)"

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2.10.5 ARCHITECT ENGINEERING REPRESENTATIVE (PICKARD,
LOWE & GARRICK)

Primary (Job title):

Senior Engineer

Alternate (Job Title):

Senior Engineer

Reporting Location:

Emergency Operations Facility (upon request)

Reports To:

Advisory Support Coordinator

Supervises/Coordinates:

Pickard, Lowe & Garrick's Support Staff

Basic Function(s):

Provide support to the Recovery Manager and his staff in areas of organizational commitment and resolution of technical issues.

Primary Responsibilities:

- (1) Attendance at Advisory Support meetings to act as the Pickard, Lowe & Garrick contact regarding technical and administrative matters.
- (2) Be prepared to commit his company's engineering and technical resources in order to support a recovery effort.
- (3) Coordinates his company's on-site activities.

Applicable Implementing Procedures:

EPIP-RR-59: "ARCHITECT ENGINEERING REPRESENTATIVE
(PICKARD, LOWE & GARRICK)"

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2.10.6 ARCHITECT ENGINEERING REPRESENTATIVE (STONE & WEBSTER)

See 2.7.3. of this section.

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2.10.7 NUCLEAR STEAM SUPPLY SYSTEM REPRESENTATIVE

See 2.7.4. of this section.

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2.10.8 RADIOLOGICAL ASSESSMENT REPRESENTATIVE

Primary (Job Title):

Senior Consultant - Pickard, Lowe & Garrick

Alternate (Job Title):

Consultant - Pickard, Lowe & Garrick

Reporting Location:

Emergency Operations Facility (upon request)

Reports To:

Advisory Support Coordinator

Supervises/Coordinates:

N/A

Basic Function(s):

Act in an advisory function in analyzing and assessing meteorological and radiological data and making recommendations to the Recovery Manager regarding public health and safety.

Primary Responsibilities:

- (1) Provide a dose assessment for licensing support activities.
- (2) Assist in determining fuel cladding integrity by comparing the concentration of noble gas released to the total theoretical concentration of noble gas for that specific core burnup.
- (3) Make recommendations to the Recovery Manager regarding a controlled release rate of fission product gases necessary to purge containment.
- (4) Analyze and assist the Dose Assessment Group in determining doses and dose rates to the surrounding public and make recommendations to the Recovery Manager and Emergency Coordinator regarding the need for evacuation.

Applicable Implementing Procedures:

EPIP-RR-60: "RADIOLOGICAL ASSESSMENT REPRESENTATIVE"

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3.0 Reentry

3.1 Purpose

The purpose for a reentry plan is to provide a means to regain access to an on-site or off-site area that was previously made inaccessible due to an emergency. The applicable implementing procedure is EPIP-RR-3: "REENTRY TO EVACUATED AREA".

3.2 Authority

The Recovery Manager has the responsibility for authorizing reentry into a previously evacuated area. In making this decision, concurrence is required from the Emergency Coordinator.

3.3 Implementing Organization

The implementation of the re-entry plan is carried out by the Recovery Organization depicted in Figure M-1 and further discussed in Section M.2.1 through M.2.10 of this plan. This organization has access to all information, documents, equipment, and personnel required to support a reentry effort.

3.4 Justification for Emergency Radiation Exposure Doses

Although every effort should be made to keep exposure as low as reasonably achievable (ALARA), it is understood that there are emergency situations which transcend the normal requirements for limiting exposure. When such situations exist the Emergency Coordinator with the concurrence of the Recovery Manager will make the determination as to the amount of radiation exposure that will be permitted based on the following guidelines.

3.4.1 Life Saving

In order to avoid restricting actions that may be necessary to save lives, an exposure not exceeding 75 REM could be permitted.

3.4.2 Public Health and Safety

When the risk of hazard is such that life would be in jeopardy or there would be severe effects on the health of the public, volunteers may receive up to 75 REM exposure.

3.4.3 Protection of Property

When emergency on-site action is necessary to reduce a hazard potential to acceptable levels or to prevent substantial loss of property, an exposure up to 12 REM may be received by participating individuals. However, volunteers, under special circumstances, may receive up to 25 REM exposure.

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3.4 (Continued)

3.4.4 Recovery of the Dead

In situations where the bodies of accident victims are in areas inaccessible because of high radiation fields, special planning and remote recovery devices should be used to retrieve the bodies. Exposure of recovery personnel should not exceed 12 REM.

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4.0 Waste Disposal Under Emergency Conditions

Radioactive wastes are packaged and shipped from the Fort Calhoun Station in accordance with regulations of the Department of Transportation & Implementing Procedure EPIP-RR-8: "WASTE MANAGEMENT". These wastes would be either low specific activity (LSA) material (compacted waste and waste dispersed in cement), Class A quantities (dewatered in exchange resins), or Class B quantities (filters solidified in cement). These wastes are all packaged and stored within a control area so there is no possibility of an accident occurring outside of an area designed to handle a spill and high radiation levels other than a transportation accident.

A serious waste handling accident which could occur on-site would be the rupture of a spent resin discharge line. The demineralizer capsules are located in shielded cubicles. The resin would be contained in the room and not present a hazard to the surrounding area. Normal health physics procedures would control radiation exposures and provide corrective actions during the cleanup phase of a spill of this nature.

Any spent resin which might enter the floor drain in the room would be pumped to the spent regenerant tanks. These tanks are located below ground level in shielded cubicles, so again, there would be no hazard to personnel.

The only conceivable off-site consequence of an on-site spill would be a temporary increase in radiation levels at the exclusion area boundary.

The only waste liquid accident that could occur on-site which would affect the surrounding environment is the accidental release of liquid waste from one of the two monitor tanks to the circulating water discharge tunnel. Prior to waste release to the circulating water discharge tunnel, one of the two monitor tanks is filled with treated liquid waste which is thoroughly mixed and then sampled. A radiochemical analysis is made and if the activity level is suitable for release within the limits of 10CFR20 the batch is released at a controlled rate. If the activity level would result in a release above 10 CFR 20 limits, the batch is either kept in the tank or returned to the waste disposal system for further treatment.

In order to make a controlled release, five manually controlled valves between the monitor tanks and the overboard discharge header must be opened. One of these valves is pneumatic and of fail-closed design; a radiation monitor installed in the discharge line automatically closes this valve if the waste activity reaches the predetermined high alarm setpoint. High radiation is annunciated in the control room at two setpoints. The liquid effluent activity is continuously indicated and recorded in the control room. The first setpoint is set to alarm at a lower activity than the setpoint that trips the effluent valve, thereby providing ample warning of rising activity. The monitor is equipped with a loss of background alarm and a remotely operated check source to permit testing of the monitor at any time. Administrative controls, multiple valving, fail-safe features, and reliable instrumentation and controls provide assurance against the release of radioactive liquid waste to the environment in excess of 10CFR20 limits.

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4.0 (Continued)

Waste processing and shipment is routinely performed by plant operating personnel. A renewable annual contract is maintained with a major waste disposal service organization to assure that all waste can be solidified and packaged in a manner acceptable for burial. Portable solidification units and shielding casks are available as required.

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SECTION X

APPENDIX B

AGENCY EMERGENCY PLANS

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APPENDIX B

SUPPORTING EMERGENCY PLANS

Copies available at (1) Technical Support Center
(2) Emergency Operation Facility
(3) Alternate Emergency Operation Facility

Federal

U. S. Department of Energy Radiological Assistance Plan

State

State of Iowa Emergency Response Plan
State of Nebraska Radiological Emergency Response Plan

Local

City of Bellevue/Sarpy County (Nebraska) Nuclear Incident Reception Plan
City of Fremont/Dodge County (Nebraska) Nuclear Incident Reception Plan
Harrison County (Iowa) Radiological Emergency Response Plan
Pottawattamie County (Iowa) Radiological Emergency Response Plan
Washington County (Nebraska) Radiological Emergency Response Plan
University of Nebraska Radiation Health Center - Standard Operating Procedure Manual

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SECTION X

APPENDIX B.1

EVACUATION SECTORS

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Evacuation time estimates based on a dynamic analysis for the plume exposure pathway (Appendix 4 - NUREG-0654, Rev. 1) are included in Iowa and Nebraska Emergency Response Plans. A summary of these estimates are presented in this section.

Evacuation routes and population distribution are presented in a map format in this section. Population distribution is also presented in a table format.

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TABLE X.B.1.1

POPULATION ESTIMATES WITHIN THE PLUME
EXPOSURE PATHWAY EMERGENCY PLANNING ZONE

Sector	0-2 miles	2-5 miles	5-10 miles	0-2 miles	0-5 miles	0-10 miles
A	4	49	104	4	53	157
B	7	26	422	7	33	455
C	15	38	82	15	53	135
D	0	19	3209	0	19	3228
E	0	7	227	0	7	234
F	0	0	120	0	0	120
G	6	45	559	6	51	610
H	55	125	1117	55	180	1297
J	24	177	378	24	201	579
K	21	90	369	21	111	480
L	33	90	257	33	123	380
M	15	114	641	15	129	770
N	18	531	226	18	549	775
P	6	4947	340	6	4953	5293
Q	9	1495	242	9	1504	1746
R	0	152	124	0	152	276

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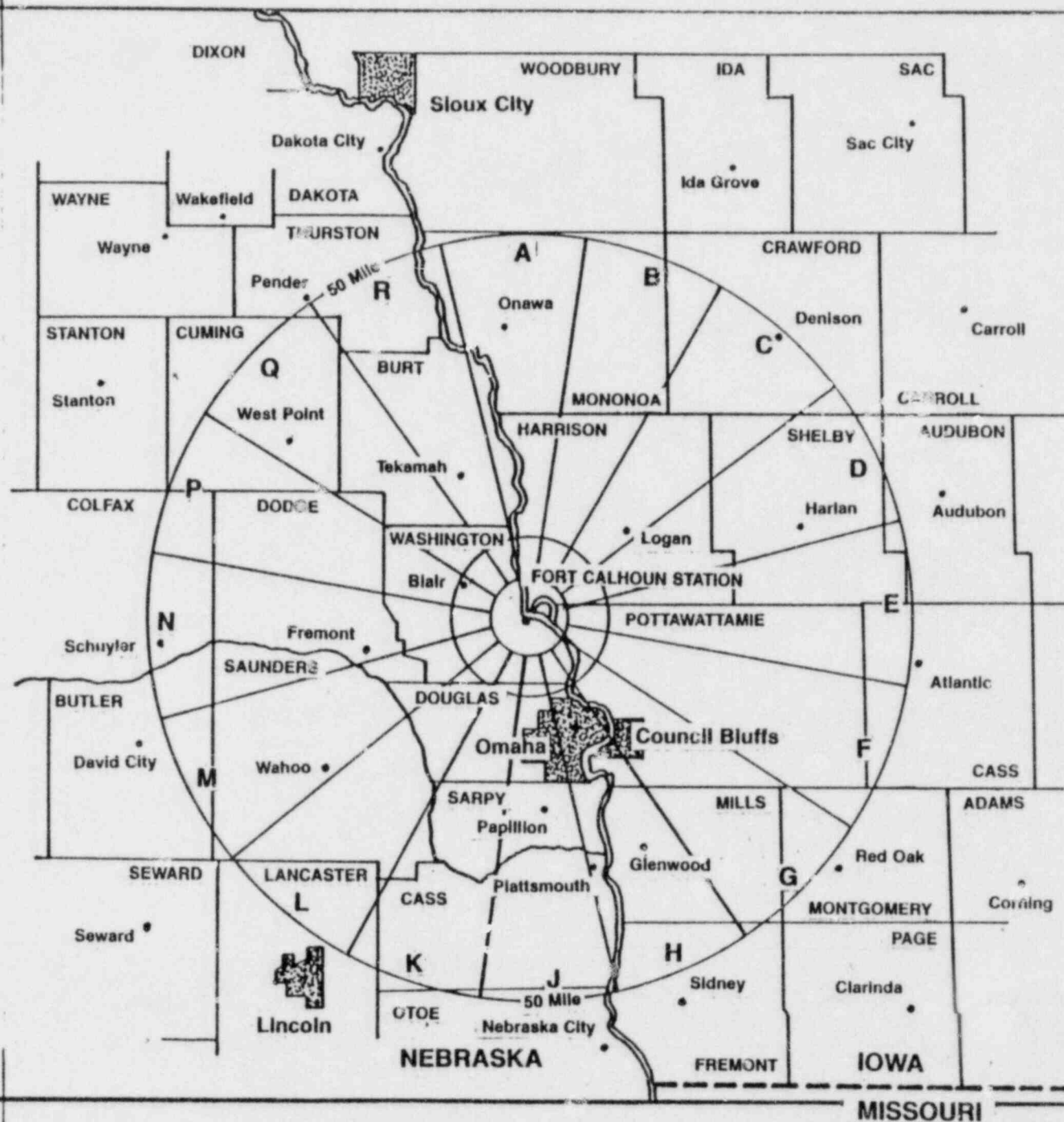
Omaha Public Power District
Fort Calhoun Station
Unit #1

Emergency Plan

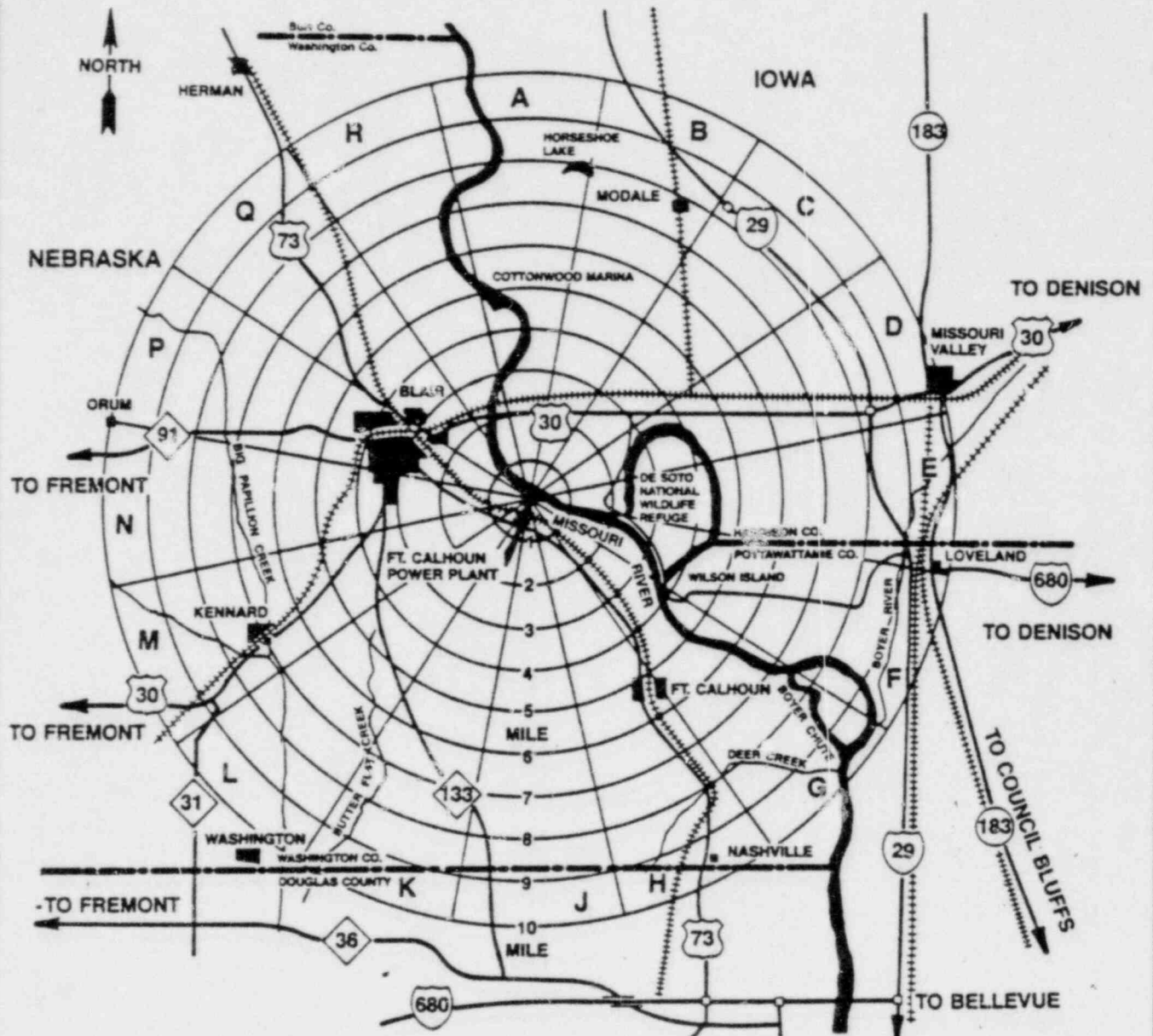
Figure X.B.1.1

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INGESTION EMERGENCY
PLANNING ZONE



EMERG-X.B.1-5



ROAD SYMBOLS

- IOWA STATE ROAD
- NEBR. STATE ROAD
- U.S. HIGHWAY
- INTERSTATE HIGHWAY

NOTE: IOWA AND NEBRASKA
ARE DIVIDED BY THE
MISSOURI RIVER

Omaha Public Power District
Fort Calhoun Station
Unit #1

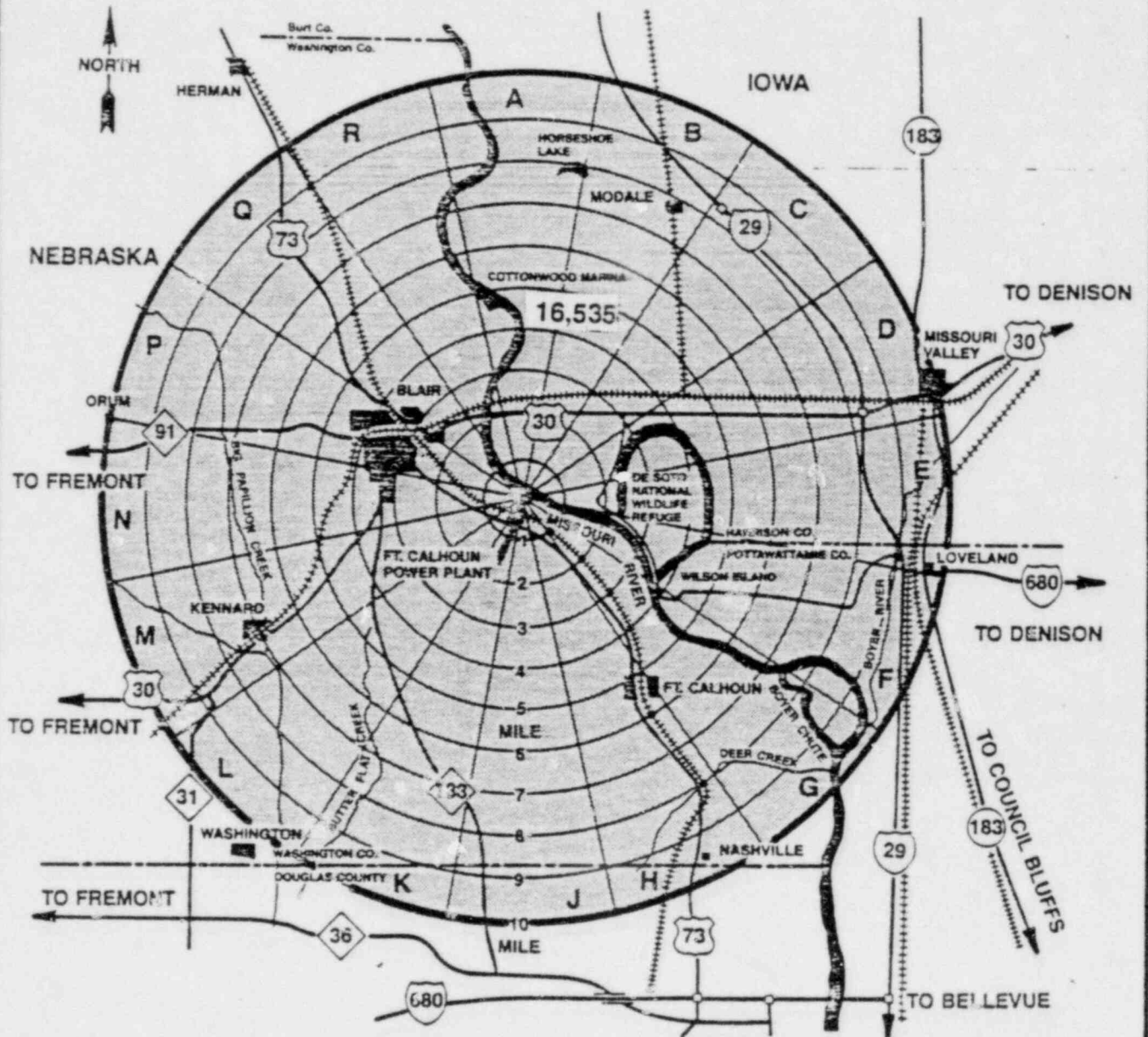
PLUME EXPOSURE PATHWAY
EMERGENCY PLANNING ZONE

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Emergency Plan

Figure X.B.1.C

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Omaha Public Power District
Fort Calhoun Station
Unit #1

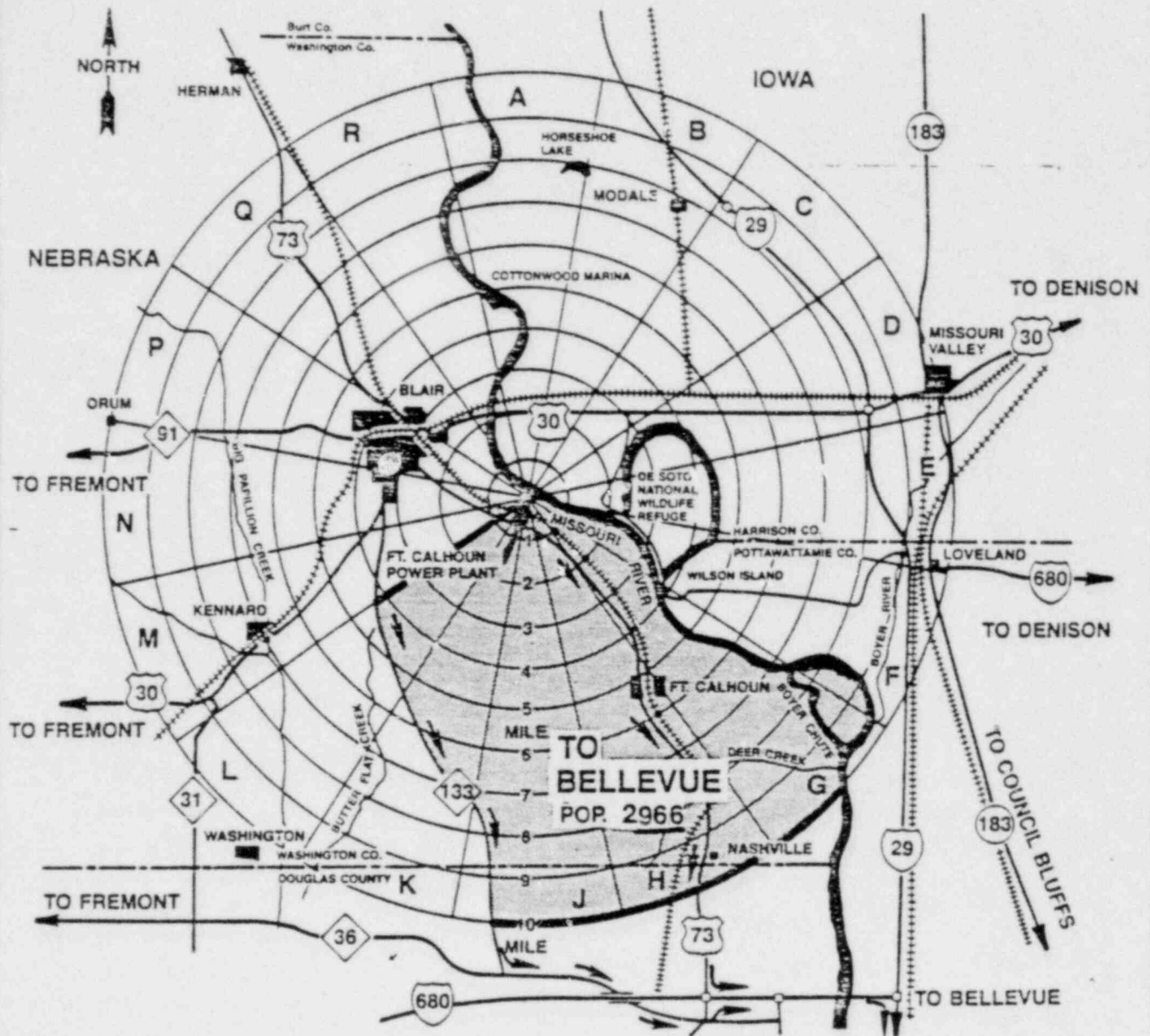
TOTAL POPULATION
WITHIN EMERGENCY
PLANNING ZONE

R2 7-7-81

Emergency Plan

Figure X.B.1.3

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Omaha Public Power District
Fort Calhoun Station
Unit #1

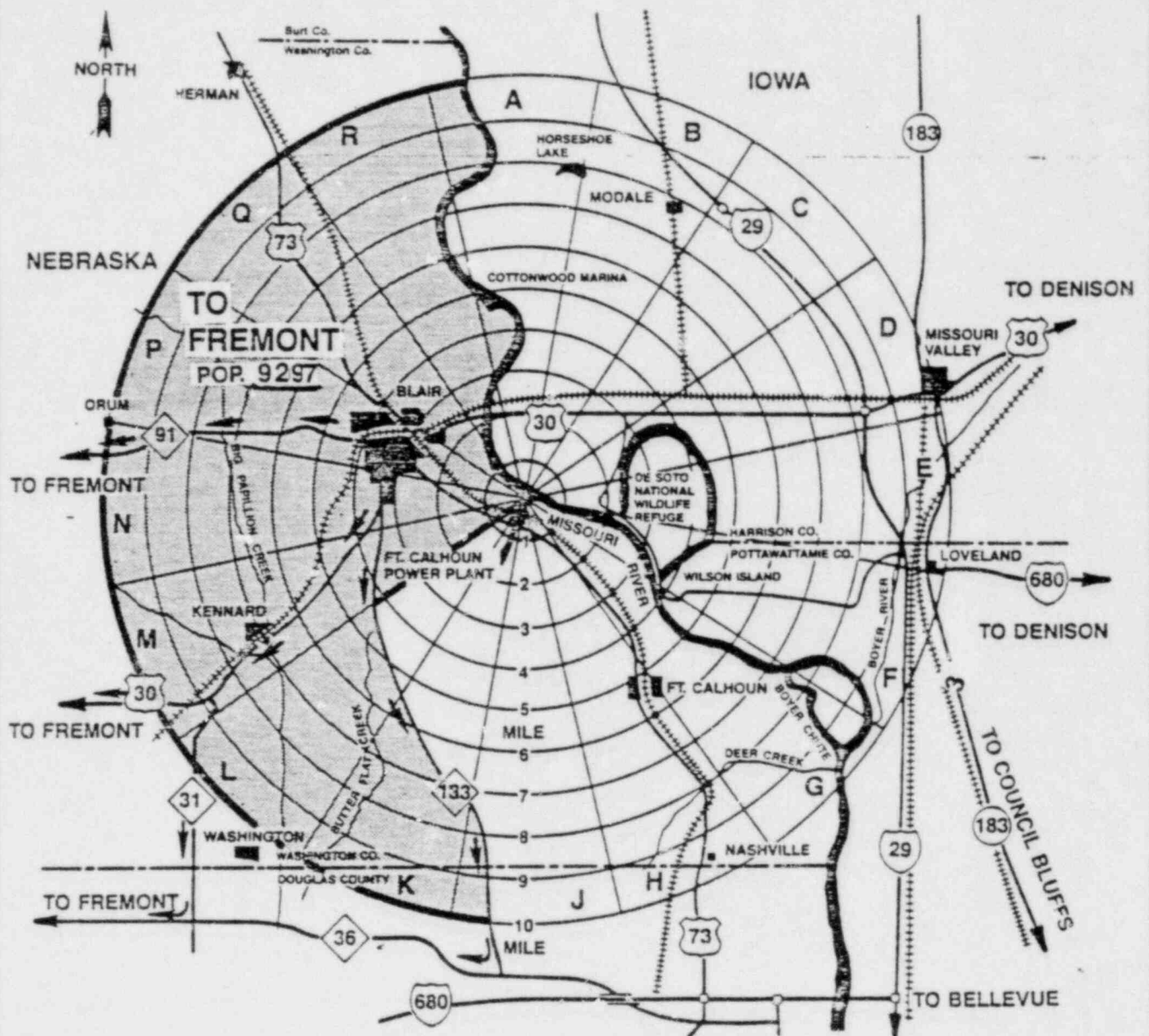
EVACUATION ROUTES OF
PLUME EXPOSURE PATHWAY
TO BELLEVUE

R2 7-7-81

Emergency Plan

Figure X.B.1.4

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Omaha Public Power District
Fort Calhoun Station
Unit #1

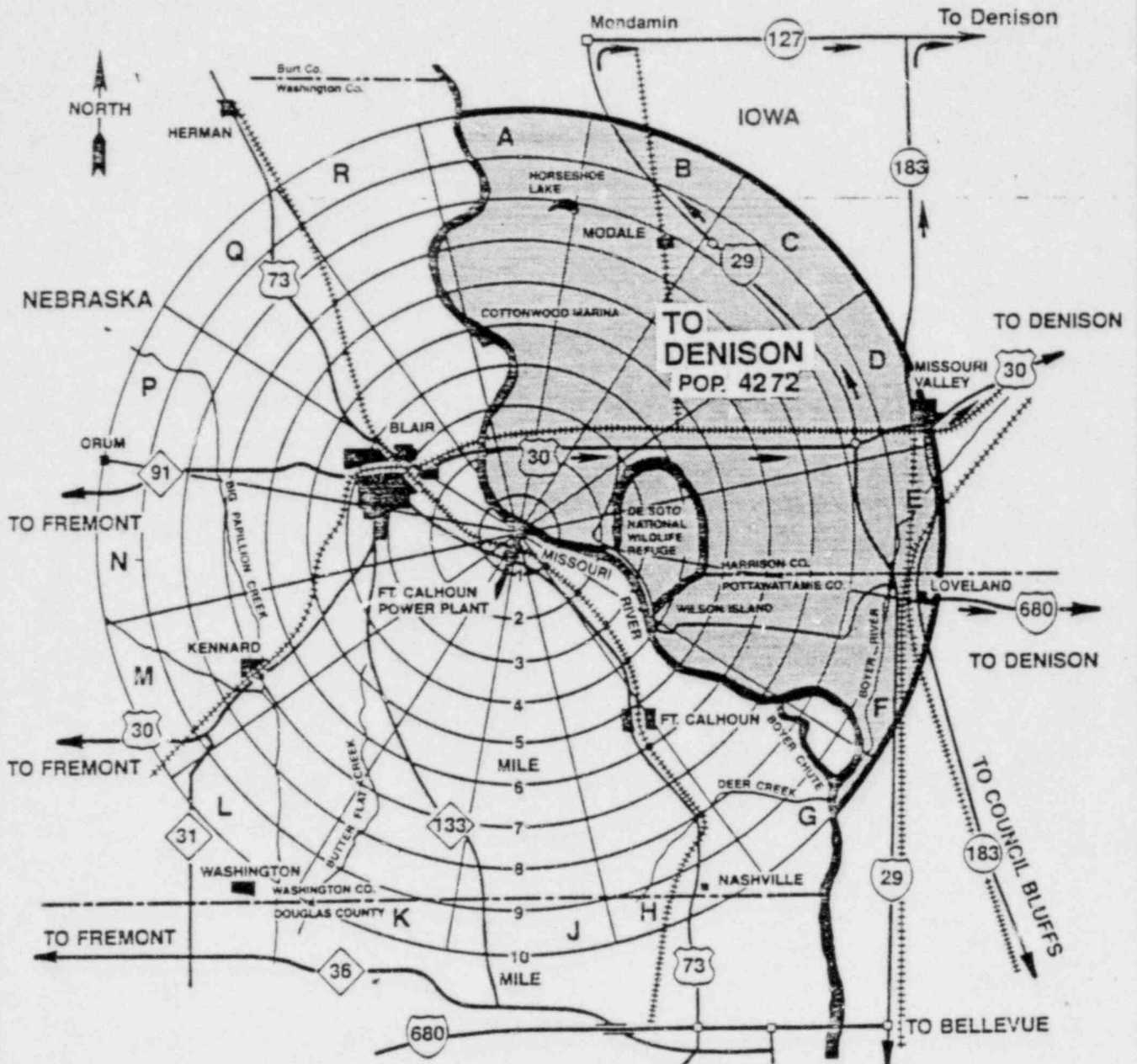
EVACUATION ROUTES OF
PLUME EXPOSURE PATHWAY
TO FREMONT

R2 7-7-81

Emergency Plan

Figure X.B.1.5

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Omaha Public Power District
Fort Calhoun Station
Unit #1

EVACUATION ROUTES OF
PLUME EXPOSURE PATHWAY
TO DENISON

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Emergency Plan

Figure X.B.1.6

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TABLE X.B.1.2
STATE OF NEBRASKA
Summary of Results of Evacuation Times Analysis

AREAS	Permanent Population	Permanent Pop. Vehicles	Transient Population	Transient Pop. Vehicles	Persons Without Vehicles	Notification Time	Notification Time Adverse Cond.	Permanent Pop. Response Normal Conditions	Permanent Pop. Response Adverse Conditions	Transient Pop. Response Normal Conditions	Transient Pop. Response Adverse Conditions	General Pop. Evac. Time Normal Conditions	General Pop. Evac. Time Adverse Conditions	Confirmation Time	Special Pop. Evac. Time Normal Conditions	Special Pop. Evac. Time Adverse Conditions
-------	----------------------	-------------------------	----------------------	-------------------------	--------------------------	-------------------	---------------------------------	---	--	---	--	---	--	-------------------	---	--

WITHIN TWO MILES

SA-1	61	20	0	0	0	:30	1:00	1:00	1:30	--	--	1:35	2:40	:30	--	--
SA-2	93	29	75	50	0	:20	:25	1:15	2:00	:30	:30	1:40	2:35	:30	--	--
SA-3	33	11	0	0	0	:15	:15	1:00	1:30	--	--	1:30	2:05	:15	--	--

WITHIN FIVE MILES

SA-4	231	131	0	0	20	1:05	1:45	1:15	2:00	--	--	2:35	4:15	1:05	:50	1:00	Schools
SA-5	564	131	75	50	0	1:45	3:00	1:30	2:30	:30	:30	3:30	6:00	1:45	--	--	
SA-6	7207	2622	176	129	900	1:15	2:30	1:30	2:30	:30	:30	4:15	8:00	1:15	3:55	5:50	(Health Care)

WITHIN TEN MILES

SA-7	1907	602	120	33	205	2:35	4:20	1:30	2:30	:30	--	4:45	8:10	2:35	1:35	2:00	(Public Trans.)
SA-8	2209	564	75	50	123	3:05	5:00	1:30	2:30	:30	:30	5:10	8:40	3:05	1:45	2:05	"
SA-9	8147	2835	176	129	900	2:10	3:50	1:30	2:30	:30	:30	5:15	9:50	2:10	4:10	6:20	(Health Care)
EPZ	12263	4001	371	212	1228	4:20	6:40	1:30	2:30	:30	:30	7:50	3:10	4:20	4:10	6:20	(Health Care)

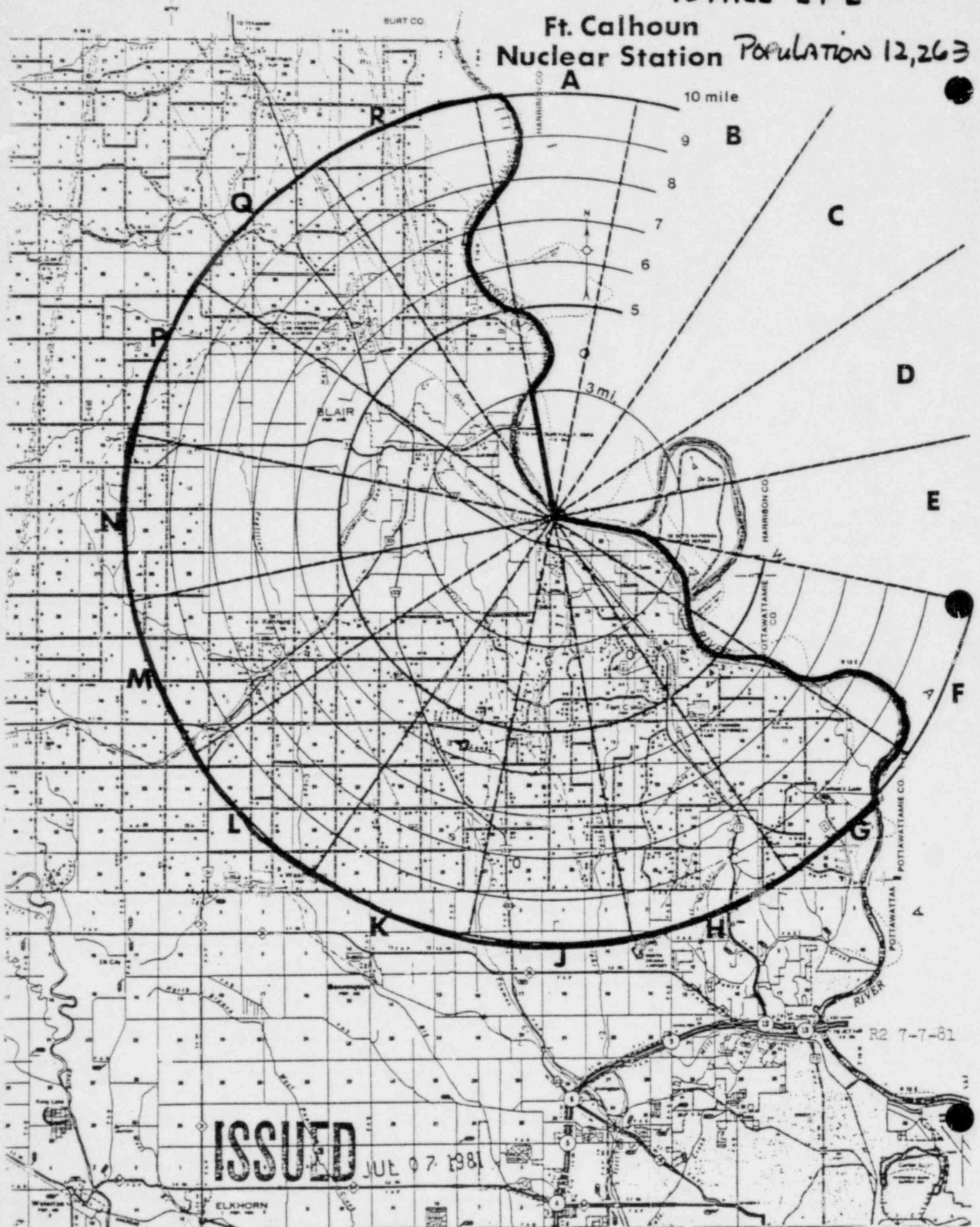
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EMERG-X.B.1-11

Figure X.B.1.7

EMERG-X.B.1-12
10 MILE EPZ

Ft. Calhoun
Nuclear Station Population 12,263



EMERG-X.B.1-13
SUB-AREA 1
68'2"
POPULATION 61

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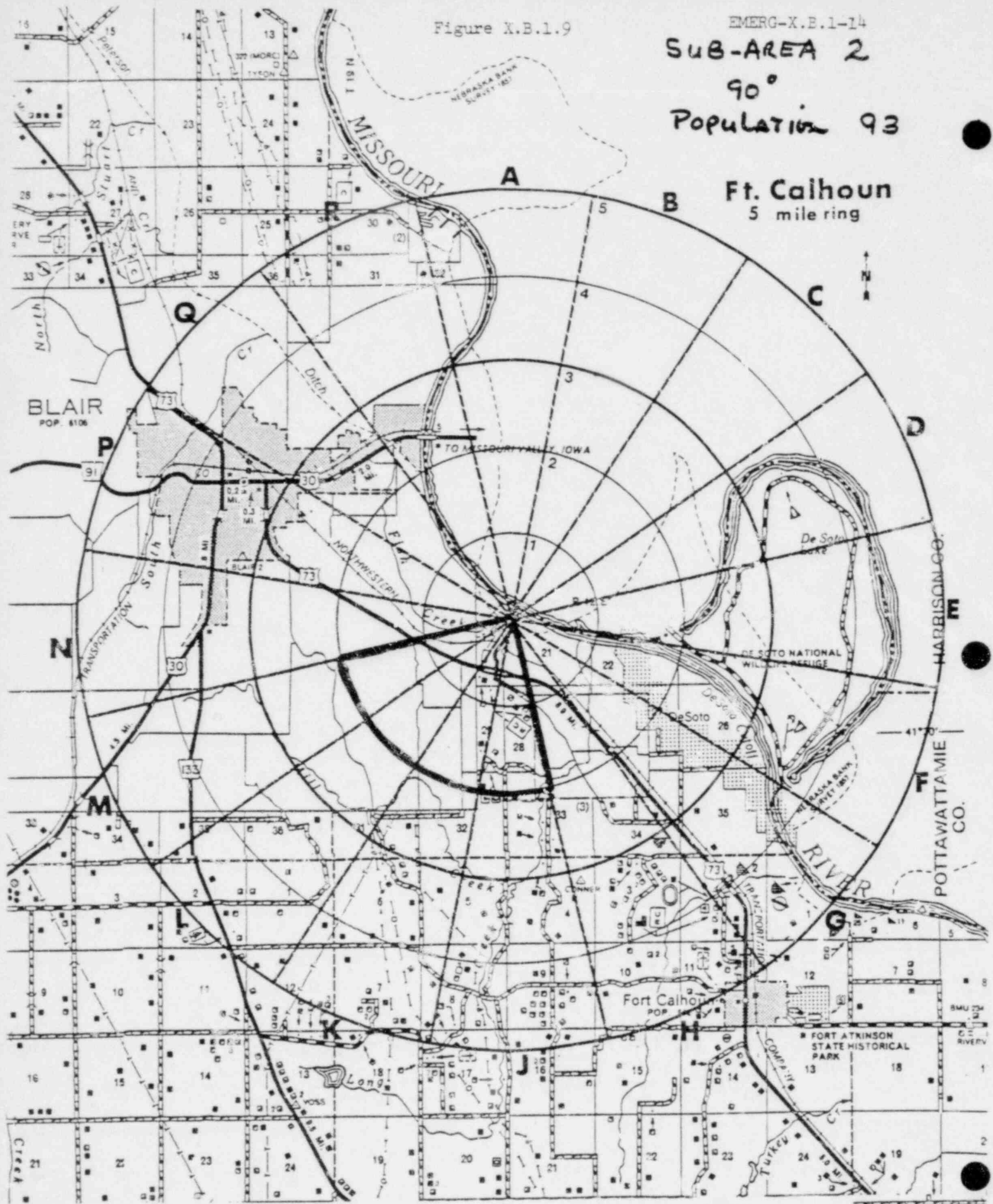
Figure X.B.1.9

EMERG-X.B.1-14

SUB-AREA 2

90°

Population 93

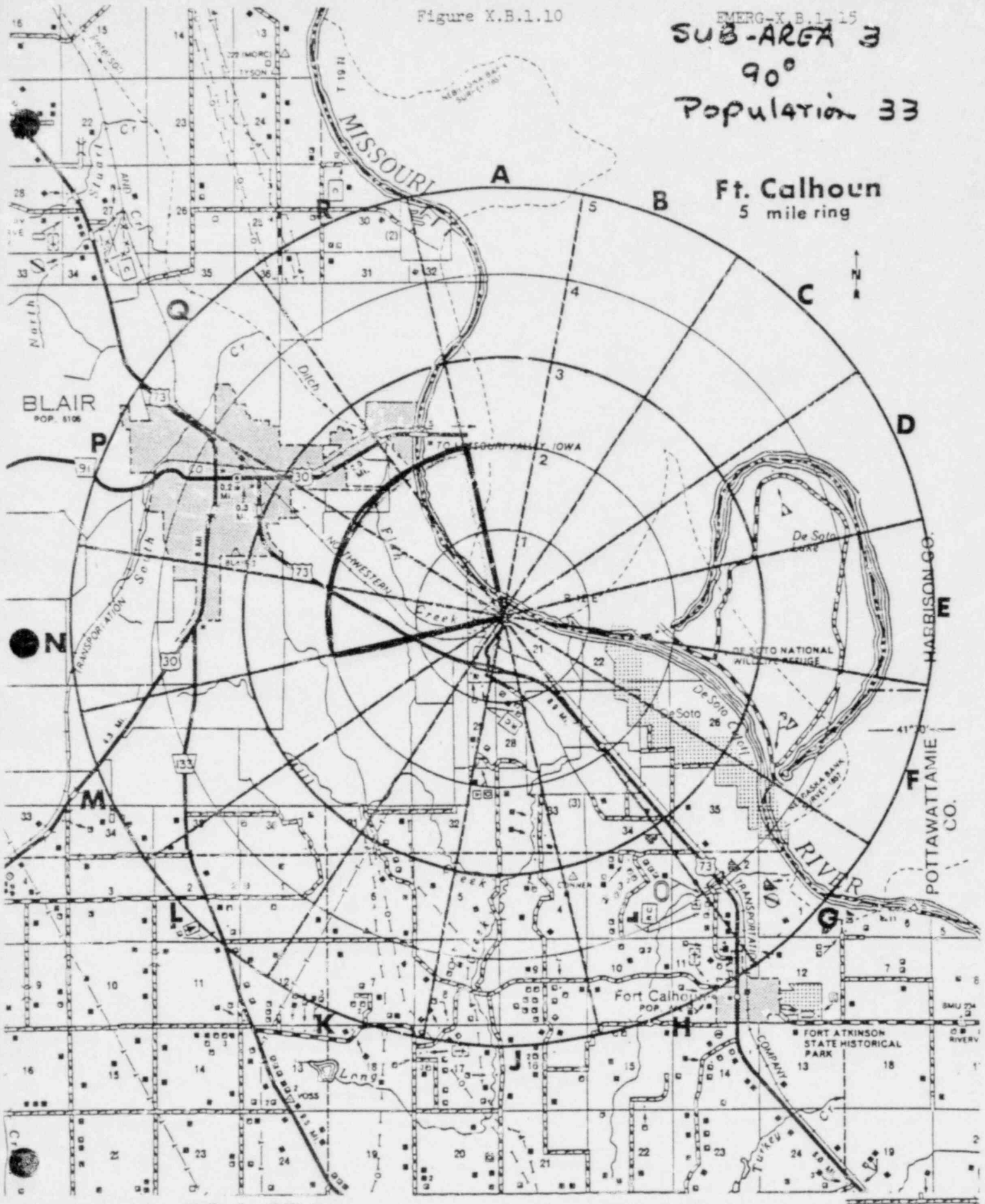


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EMERG-X.B.1.15
SUB-AREA 3
 90°
 Population 33



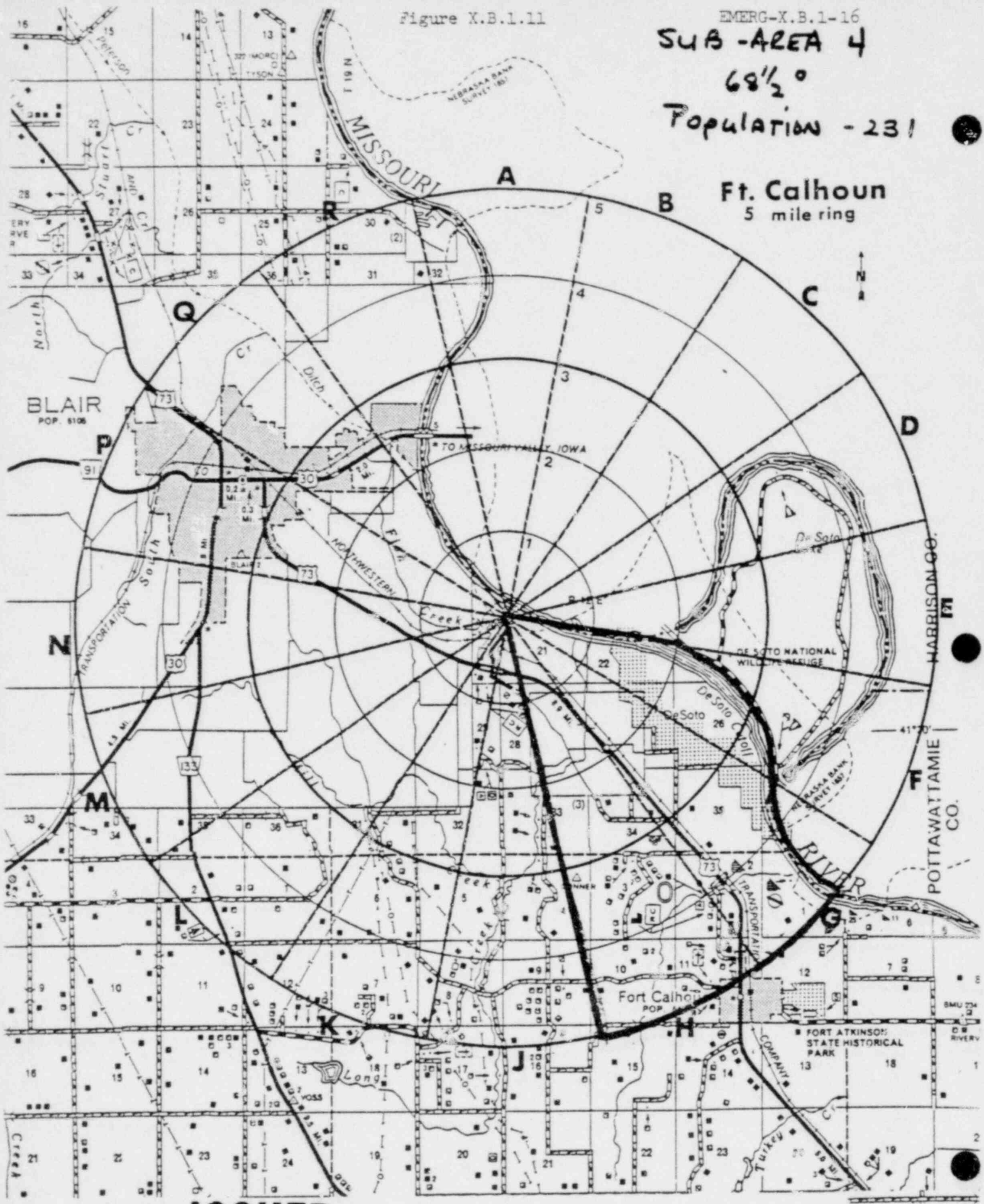
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SUB-AREA 4

68 1/2°

Population - 231



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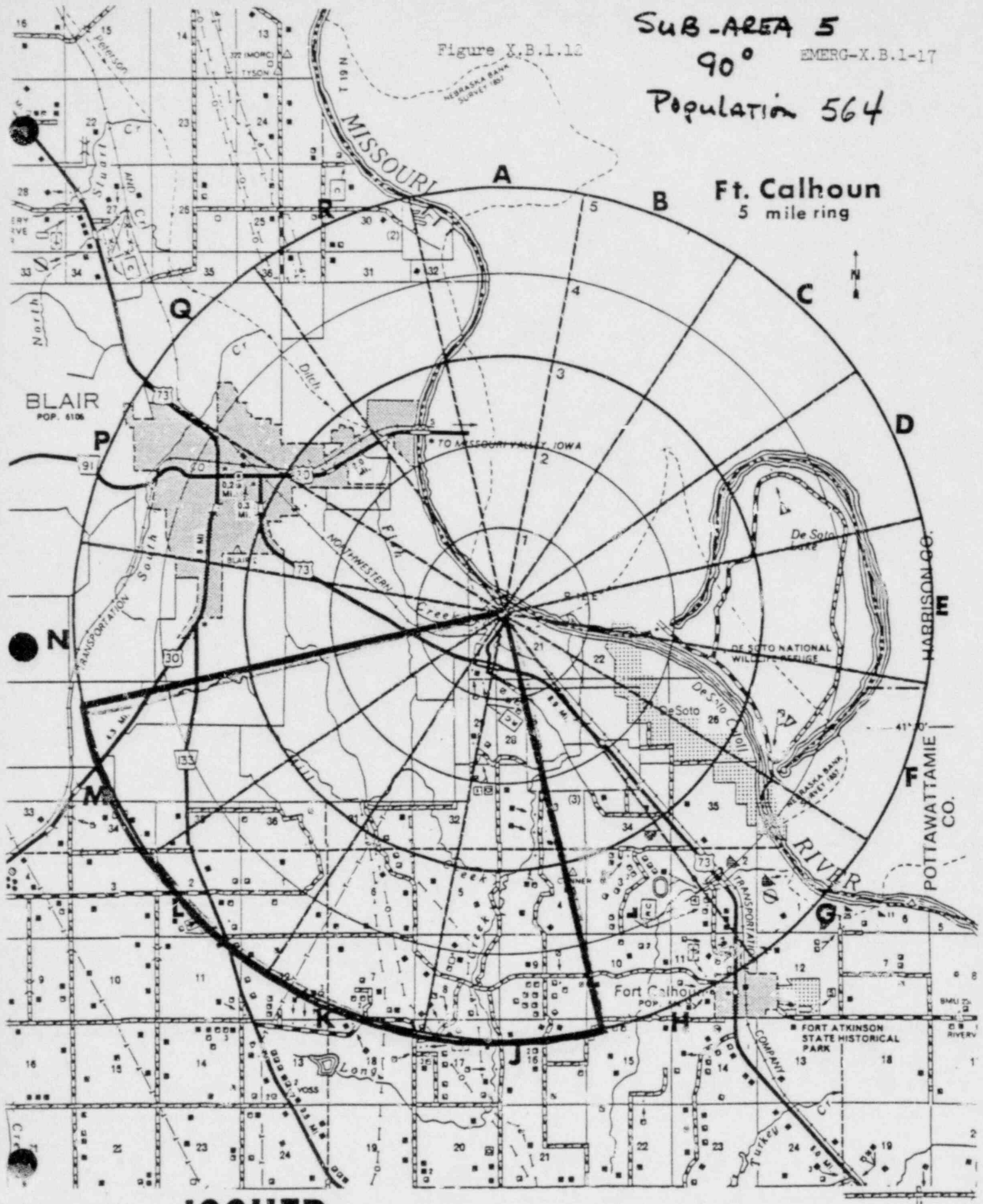
SUB-AREA 5

90°

EMERG-X.B.1-17

Population 564

Figure X.B.1.12



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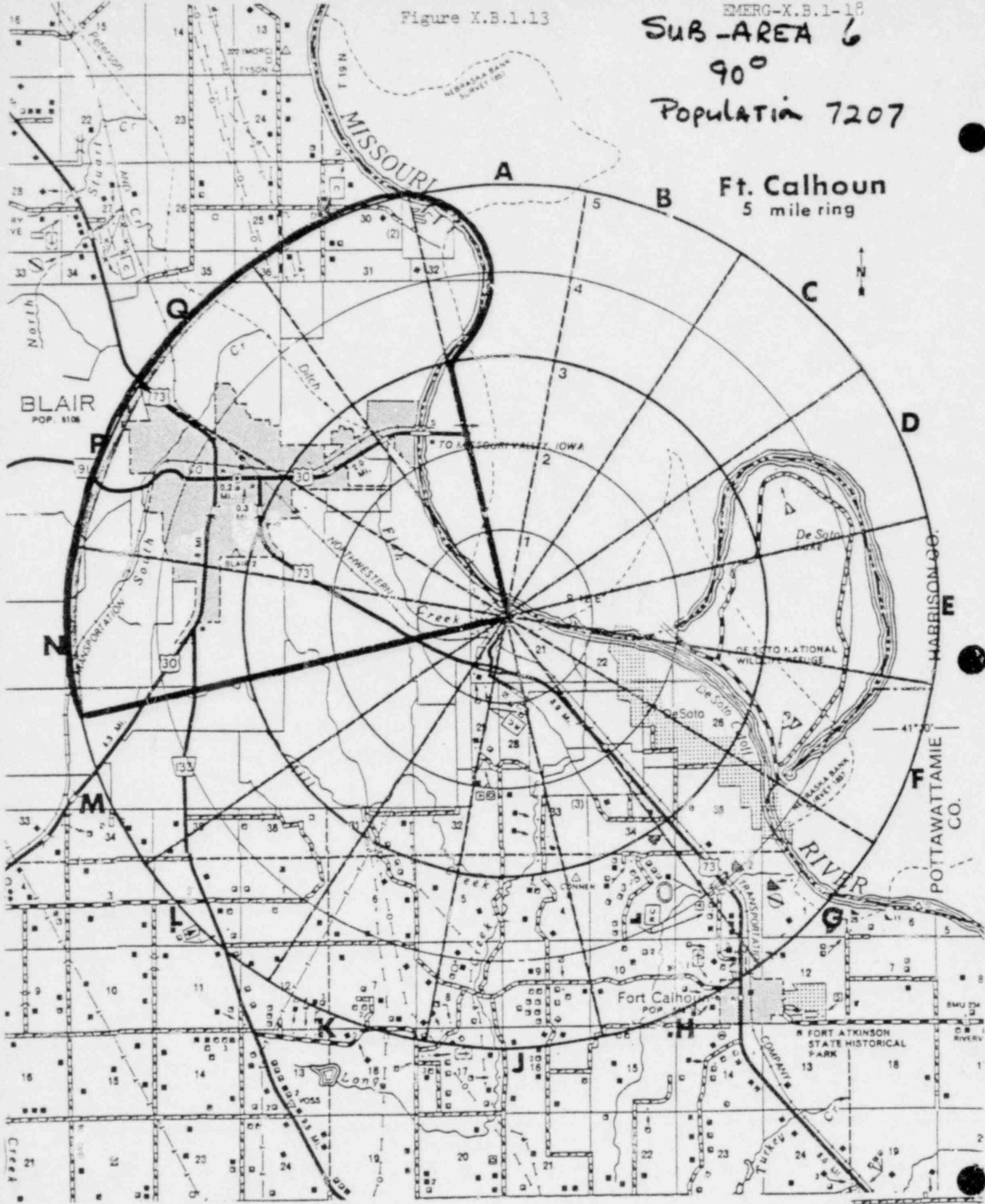
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SUB-AREA 6

90°

Population 7207



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Figure X.B.1.14

SUB AREA 7

68'3"

Ft. Calhoun
Nuclear Station Population 1907

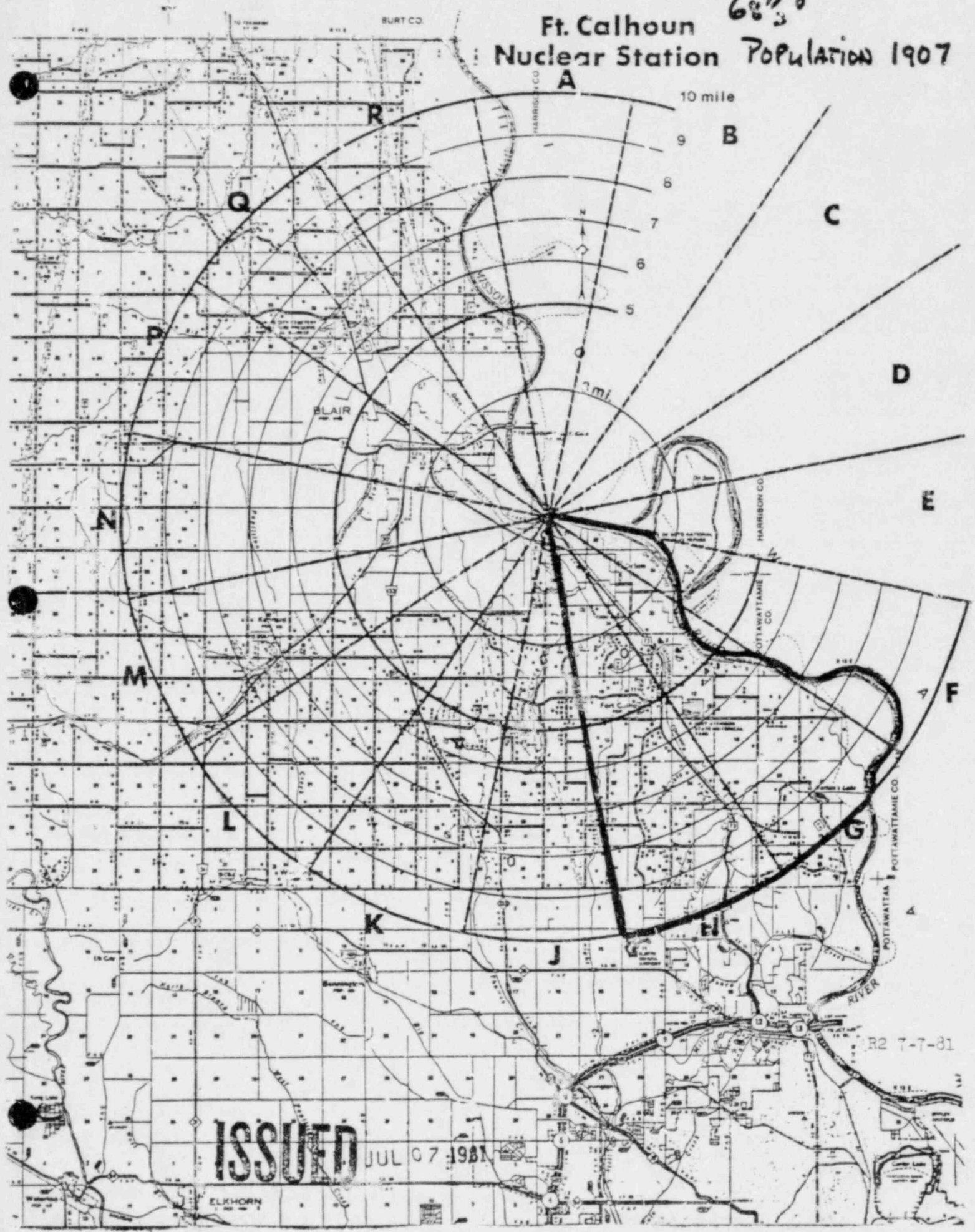


Figure X.B.1.15

EMERG-X.B.1-20
SUB-AREA 9

**Ft. Calhoun
Nuclear Station**

**90°
Population 8147**

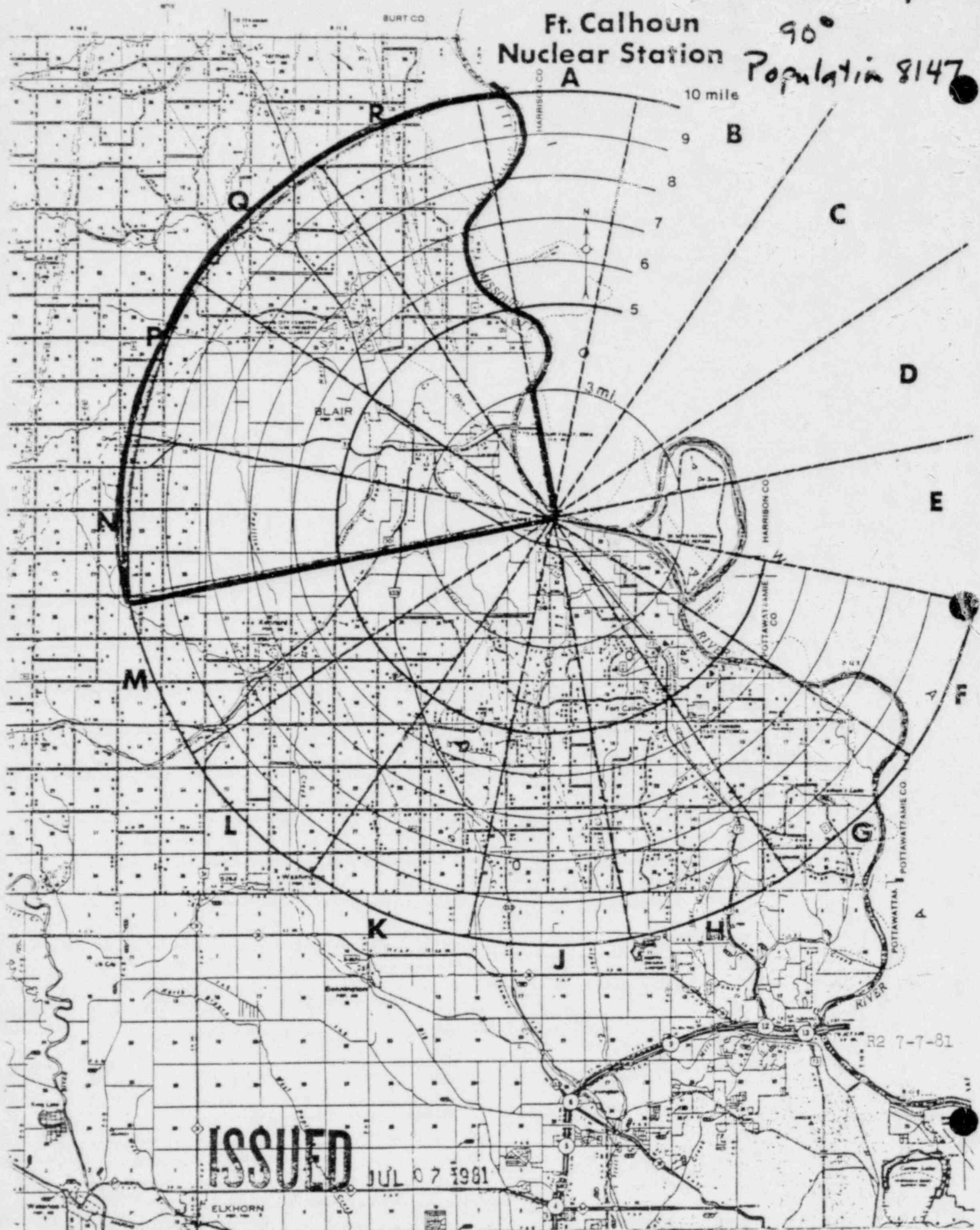


Figure X.B.1.16

SUB-AREA 8

Ft. Calhoun
Nuclear Station

90°

Population 2209

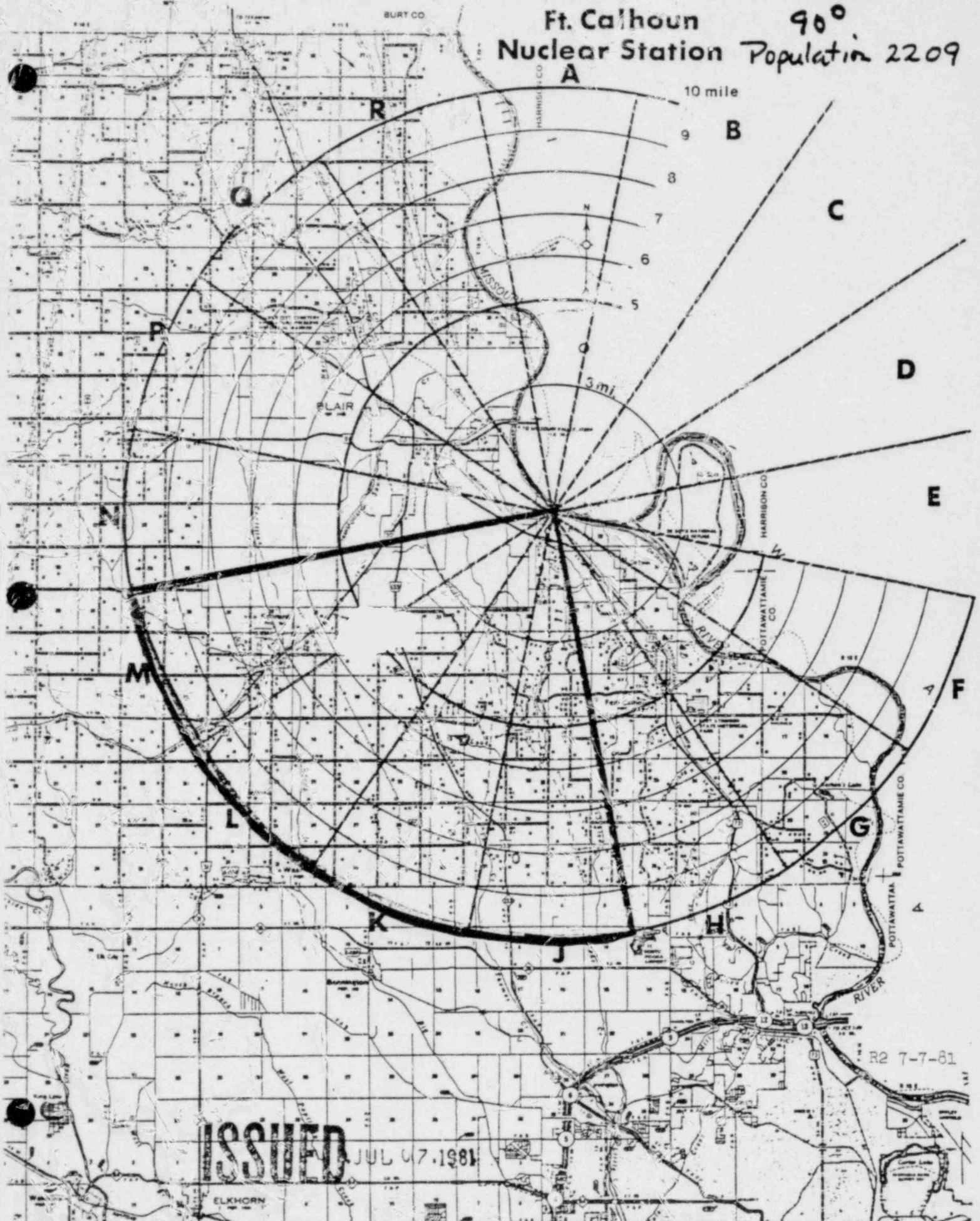


TABLE X.B.1.1.3

STATE OF IOWA

Summary of Results of Evacuation Times Analysis

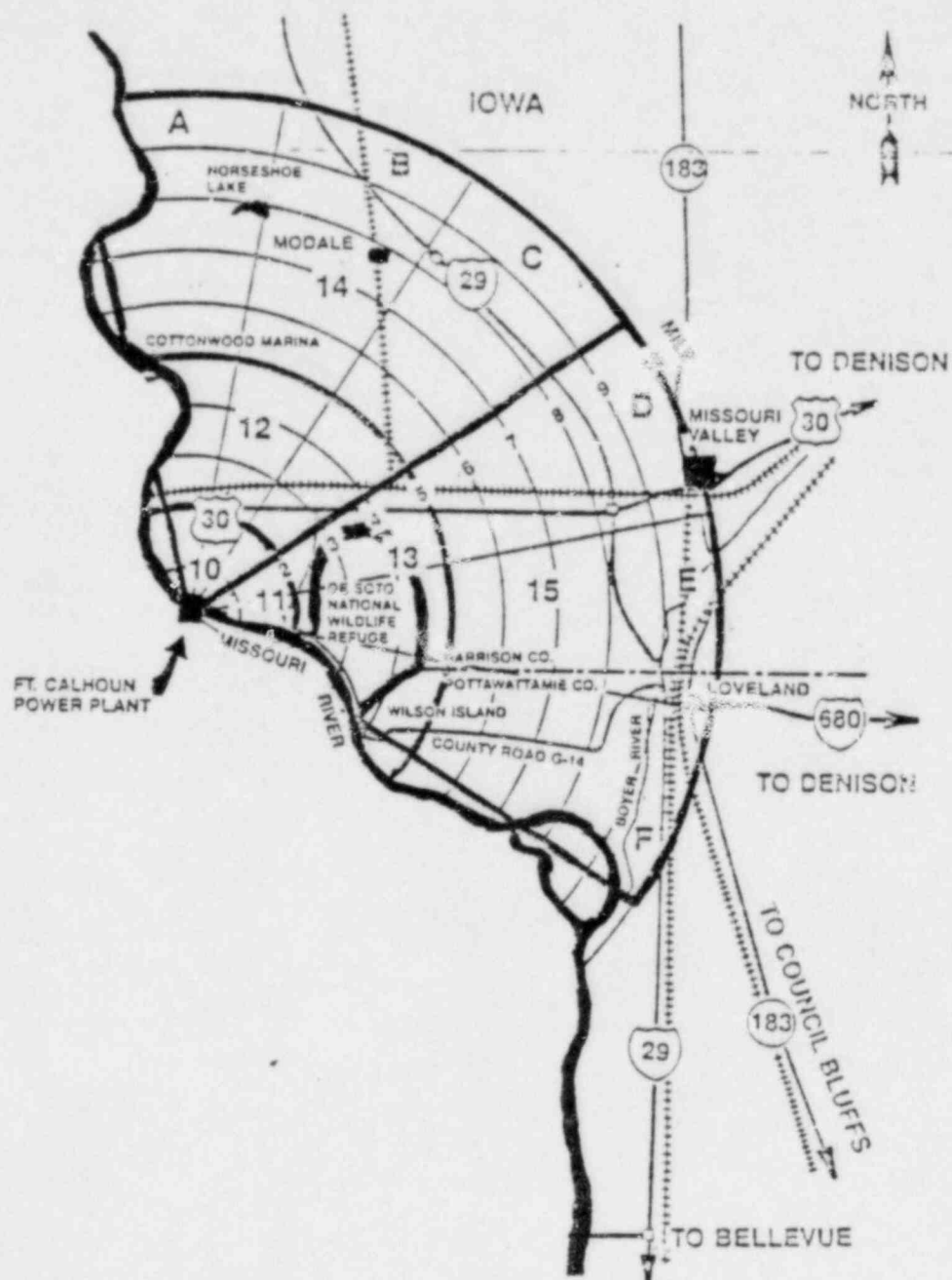
AREAS	Permanent Population	Permanent Pop. Vehicles	Transient Population	Transient Pop. Vehicles	Evacuation Capacity Per Hour	Notification Time	Preparation Time	Permanent Pop. Response Normal Conditions	Permanent Pop. Response Adverse Conditions	Transient Pop. Response Normal Conditions	Transient Pop. Response Adverse Conditions	General Pop. Evac. Time Normal Conditions	General Pop. Evac. Time Adverse Conditions	Confirmation Time	Special Pop. Evac. Time Normal Conditions	Special Pop. Evac. Time Adverse Conditions
SA-10	26	7				:15	:45-1:15	:50	1:25			:05	:10			
SA-11	0	0														
SA-12	64	17				:15	1:00-1:30	1:09	1:48			:09	:18			
SA-13	26	7	500 ²	140		:15	1:00-2:00	1:09	1:48	1:47	1:60	:09	:18		:47	:60
SA-14	600	160				:15	1:00-1:30	1:15	1:55			:15	:25			
SA-15	3556 ¹	950				:15	1:10-1:30	1:15	1:35			:05	:05			

¹ Including town of Modale² At DeSoto Bend, average summer Saturday at one time.

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Omaha Public Power District
Fort Calhoun Station
Unit #1

IOWA EPZ AND
SUBAREAS

R2 7-7-81

EVACUATION TIME ESTIMATE STUDY

Figure X.B.1.17



Omaha Public Power District

1622 HARNEY ■ OMAHA, NEBRASKA 68102 ■ TELEPHONE 536-4000 AREA CODE 402

July 24, 1981

Mr. K. V. Seyfrit, Director
U. S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

Reference: Docket No. 50-285

Dear Mr. Seyfrit:

Enclosed are three copies of Revision 2 to the Fort Calhoun Station Emergency Plan. Revision 2 should be incorporated into the Commission's copies of the plan in accordance with the instructions provided with the revision package.

Sincerely,

W. C. Jones
Division Manager
Production Operations

WCJ/KJM,TLP:jmm

Enclosures

cc: U. S. Nuclear Regulatory Commission (10)
Office of Nuclear Reactor Regulation
Washington, D.C. 20555

LeSoeuf, Lamb, Leiby & MacRae (w/o enc.)
1333 New Hampshire Avenue, N.W.
Washington, D.C. 20036

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	FEMA-REP DIV 09	1	1	I&E 08	2	1
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