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EMERGENCY CONDITIONS

200-0 Emergency Conditions	Rev. 14	05-24-83
200-1 Classification of GSEP Conditions	Rev. 3	05-05-82
200-2 Classification of an Incident Involving Hazardous Materials	Rev. 2	01-22-82
200-T1 Quad-Cities Emergency Action Levels	Rev. 10	05-24-83
200-T2 Emergency Action Levels - Procedure Cross Reference	Rev. 2	03-07-83
200-T3 Hazardous Substances	Rev. 2	10-29-82

QUAD-CITIES EMERGENCY ACTION LEVELS

CONDITION	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
Class Description	Events in progress or have occurred which indicate a potential degradation of the level of safety of the plant.	Events in progress or have occurred which involved an actual or potential substantial degradation of the level of safety of the plant.	Events in progress or have occurred which involved actual or likely major failures of plant functions needed for protection of the public.	Events in progress or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity.
1. Aircraft crash or missiles from whatever source.	Impacted on-site	(1) Impacted on-site and equipment described in the Technical Specifications is affected such that it is operated in a degraded mode permitted by a Limiting Condition for Operation. (2) Turbine failure with casing penetration.	Impacted on-site and equipment described in the Technical Specifications is degraded such that an immediate shutdown is required.	
2. Control Room Evacuation		Evacuation is anticipated or required with control established from local stations.	Evacuation is required and control is not established from local stations within 15 minutes.	

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In addition to the Unusual Event, Alert, Site Emergency, and General Emergency, a Transportation Accident class exists. A Transportation Accident condition shall exist if any vehicle transporting radioactive materials or nonradioactive hazardous materials from a generating station is involved in a situation which could possibly breach or has breached the integrity of a shipping container(s).

QUAD-CITIES EMERGENCY ACTION LEVELS

CONDITION	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
3. Earthquake had occurred or is being experienced	Earthquake felt in-plant or detected on Station seismic instrumentation.	Equipment described in the Technical Specifications is affected such that it is operated in a degraded mode permitted by a Limiting Condition for Operation.	Equipment described in the Technical Specifications is is degraded such that an immediate shutdown is required.	
4. Unplanned explosion.		On-site and equipment described in the Technical Specifications is affected such that it is operated in a degraded mode permitted by a Limiting Condition for Operation.	On-site and equipment described in the Technical Specifications is degraded such that an immediate shutdown is required.	
5. Fire.	Requiring off-site assistance.	Equipment described in the Technical Specifications is affected such that it is operated in a degraded mode permitted by a Limiting Condition for Operation.	Equipment described in the Technical Specifications is degraded such that an immediate shutdown is required.	
6. Flood	Mississippi River level > 588 ft. MSL.	Mississippi River level > 589 ft. MSL.		

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QUAD-CITIES EMERGENCY ACTION LEVELS

CONDITION	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
7. Security threat	Security threat (event) which also poses a radiological threat, or has the potential for substantial degradation of the level of physical security at the station. (See generic GSEP Section 9.3.2.)	An ongoing security threat (event) of increasing severity, or a different threat, which involves actual or potential substantial degradation of the level of safety of the station from either the radiological or physical security view point.	Security threat (event) involving an imminent loss of physical control of the facility.	Security threat (event) involving a loss of physical control of the facility.
8. Tornado or severe winds being experienced.	(1) Tornado near facility. (a) Control Room informed by Load Dispatcher or (b) Control Room informed by station personnel who have made visual sighting or (c) Shift Supervisor informed by Weather Alert, or (2) Sustained winds of > 80 mph.	(1) Tornado strikes facility. (2) Sustained winds of > 95 mph.	(1) Sustained winds of > 110 mph and both units not in cold shutdown.	

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QUAD-CITIES EMERGENCY ACTION LEVELS

CONDITION	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
9. Toxic or uncontrolled flammable gas (Chlorine, Ammonia, Methane, etc.)	Uncontrolled release of toxic or uncontrolled flammable gas at life threatening levels near or on-site.	Uncontrolled release of toxic or uncontrolled flammable gas at life threatening levels within the protected area.	Uncontrolled release of toxic or uncontrolled flammable gas at life threatening levels within the vital areas.	
10. Loss of AC power.	Loss of all off-site power to a unit or loss of all Diesel Generators associated with a unit.	Loss of all off-site power to a unit and loss of all diesel generators associated with that unit for ≤ 15 minutes.	Loss of all off-site power to a unit and loss of all diesel generators associated with that unit for > 15 minutes.	
11. Loss of DC power.	DC power sources as described in the Technical Specifications are degraded such that a Limiting Condition for Operation requires a shutdown.	Loss of both 125 VDC and 250 VDC battery ≤ 15 minutes.	Loss of both 125 VDC and 250 VDC battery systems > 15 minutes.	

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QUAD-CITIES EMERGENCY ACTION LEVELS

CONDITION	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
12. Plant Shutdown Functions.		(1) Loss of all systems capable of maintaining cold shutdown. (2) Failure of the Reactor Protection System Instrumentation to initiate and complete a SCRAM which brings the reactor subcritical once a limiting safety system setting, as specified in the Technical Specifications, has been exceeded. (ATWS)	(1) Loss of all systems capable of maintaining hot shutdown or (2) A transient requiring operation of ECCS with failure to SCRAM.	
13. Other conditions or systems required by Technical Specifications (such as ECCS, fire protection system, etc.)	(1) Equipment described in the Technical Specifications is degraded such that a Limiting Condition for Operation requires a shutdown. (2) Loss of communications or instrumentation such that accident assessment or off-site dose assessment cannot be made.	(1) Equipment described in the Technical Specifications is degraded beyond the Limiting Conditions for Operation (as specified that require a shutdown). (2) Technical Specification Safety Limit exceeded. (3) Unplannned loss of most or all annunciators on either panel 901-3 (902-3) or or 901-5 (902-5) for greater than 30 minutes.	Unplanned loss of most or all annunciators on either panel 901-3(902-3) or 901-5(902-5) for greater than 30 minutes, and a plant transient has initiated or is in progress.	

QUAD-CITIES EMERGENCY ACTION LEVELS

CONDITION	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
14. Loss or Primary Coolant	(1) ECCS Initiation (not spurious). (2) Failure of a Primary System Safety or Relief Valve to close. (3) Total leakage rate to primary containment is greater than 25 gpm.	(1) A $\geq$ 50 gpm leakage rate increase as indicated by surveillance. (2) A main steam line break outside containment with automatic isolation. (FSAR section 14.2.3)	(1) A $\geq$ 500 gpm leakage rate increase as indicated by surveillance. (2) A main steam line break outside containment without the capability of effecting isolation. (3) Circumferential break of a reactor coolant recirculation line. (LOCA; FSAR Section 14.2.4.)	Imminent core melt.
15. Fuel Handling Accident. (Fuel Handlers report damage to irradiated fuel assemblies and Refuel Floor ARM reads 100 mr/hr.)		Standby gas treatment system operational and secondary containment isolation effective or capable of being effected. (Refueling accident; FSAR Section 14.2.2)	Standby gas treatment system not operational or secondary containment isolation incapable of being effected.	

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QUAD-CITIES EMERGENCY ACTION LEVELS

CONDITION	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
16. Loss of fission product barriers.	Coolant activity sample $\geq$ 5 uCi of I-131 dose equivalent per gram of water.	A. $\geq 2 \times 10^2$ R/hr primary containment activity, or B. Loss of 1 of the following 3 fission product barriers: (1) Cladding: grab sample > 300 µCi/cc equivalent of I-131. (Control Rod Drop Accident; FSAR Section 14.2.1) (2) Reactor coolant sys: > +2 psig drywell pressure & < -59 inches vessel level. (3) Primary Containment: (a) > 56 psig containment pressure, or (b) > 281°F containment temperature. (c) Loss of primary containment integrity when required.	A. $\geq 4 \times 10^2$ R/hr primary containment activity, or B. Loss of 2 of the following 3 fission product barriers: (1) Cladding: grab sample > 300 µCi/cc equivalent of I-131. (2) Reactor coolant sys: > +2 psig drywell pressure & < -59 inches vessel level. (3) Primary Containment: (a) > 56 psig ment pressure, or (b) > 281°F containment temperature. (c) Loss of primary containment integrity when required.	A. $\geq 2 \times 10^3$ R/hr primary containment activity, and probable loss of primary containment, or B. Loss of 2 of the following 3 fission product barriers, with an imminent loss of the 3rd fission product barrier: (1) Cladding: grab sample > 300 µCi/cc equivalent of I-131. (2) Reactor coolant sys: > +2 psig drywell pressure & < -59 inches vessel level. (3) Primary Containment: (a) > 56 psig containment pressure, or (b) > 281°F containment temperature. (c) Loss of primary containment integrity when required.

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QUAD-CITIES EMERGENCY ACTION LEVELS

CONDITION	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
17. Radio-activity Effluent release from the plant.	A. Gaseous Effluents: Technical Specification instantaneous release limits exceeded as measured by effluent radiation monitoring and counting instrumentation. (1) Noble Gases - (a) Main Chimney: Unit 1 or Unit 2 (not both) Release rate $> \frac{2.1 \times 10^5}{E\gamma}$ µCi/sec Both Units 1 and 2 Release rate $> \frac{2.6 \times 10^5}{E\gamma}$ µCi/sec (b) Reactor Bldg Vent Stack: Release rate $> \frac{2.3 \times 10^4}{1.3E\gamma + E\beta}$ µCi/sec	A. Gaseous Effluents: Effluent release > 10 times the Technical Specification instantaneous release limits as measured by radiation monitoring and counting instrumentation (1) Noble Gases - (a) Main Chimney: Unit 1 or Unit 2 (not both) Release rate $> \frac{21 \times 10^5}{E\gamma}$ µCi/sec Both Units 1 and 2 Release rate $> \frac{26 \times 10^5}{E\gamma}$ µCi/sec (b) Reactor Bldg Vent Stack: Release rate $> \frac{23 \times 10^4}{1.3E\gamma + E\beta}$ µCi/sec	A. Gaseous Effluent: Effluent monitors detect levels corresponding to > 50 mr/hr (1.3×10^7 µci/sec) for 1/2 hour or > 500 mR/hr (1.3×10^8 µci/sec) for 2 minutes at the site boundary. (Adverse Meteorology.)	A. Gaseous Effluent: Monitors detect levels corresponding to > 1 rem/hr whole body at the site boundary. This condition exists when: $Q/U > 4.5 \times 10^7$ where Q = release rate in µci/sec U = mean wind speed in mph OR $Q/U > 1.0 \times 10^8$ where Q = release rate in µci/sec U = mean wind speed in meters per second

where: Eγ = average gamma energy per disintegration (MeV/dis).
Eβ = average beta energy per disintegration (MeV/dis).
These quantities are determined monthly and are prominently posted in the Control Room.

QUAD-CITIES EMERGENCY ACTION LEVELS

CONDITION	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
17. (Cont.)	(2) Iodine and Particulates - Summation of release rate for halogens and particulates with half-lives > 8 days: $7.3Qv + 2.6Qc < 10$	(2) Iodine and Particulates - Summation of release rate for halogens and particulates with half-lives > 8 days: $7.3Qv + 2.6Qc > 10^2$		

where: Qv = release rate from the reactor building vent stack in µCi/sec.
Qc = release rate from the main chimeny in µCi/sec.

B. Liquid effluents concentration of: (1) Gross beta activity (above background) in the discharge bay in excess of the Technical Specification limit ($> 1 \times 10^{-7}$ µci/ml) unless discharge is controlled on a radionuclide basis in accordance with Appendix B, Table II, Column 2 of 10 CFR 20 and note 1 thereto.	B Liquid effluents: (1) Concentration of gross beta activity in the discharge bay > 10 times the Technical Specification Limit ($> 1 \times 10^{-6}$ µci/ml) unless discharge is controlled on a radionuclide basis in accordance with Appendix B, Table II Column 2 of 10 CFR 20 and note 1 thereto. OR (2) Estimated activity of liquid release > 40 Curies but ≤ 2000 Curies.	B. Liquid effluents: Estimated activity of liquid release is > 2000 Ci but ≤ 20,000 Ci.	B. Liquid effluents: Estimated activity of liquid release is > 2.4×10^4 ci.	

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QUAD-CITIES EMERGENCY ACTION LEVELS

CONDITION	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
18. Personnel Injury	Transportation of radioactivity contaminated injured person to hospital.			
19. Hazardous Materials	As a direct result of hazardous materials a person is killed or hospitalized or estimated property damage exceeds $50,000.	(1) Warrants precautionary activation of the TSC and placing the EOF and other key emergency personnel on standby. (2) ARM readings(s) indicate a severe degradation in the control of radioactive material.	Warrants activation of emergency centers and monitoring teams, or a precautionary notification to the public near the site.	
20. Any other conditions of equivalent magnitude to the criteria used to define the accident as determined by Station Director*	Warrants increased awareness on the part of the state and/or local off-site officials.			Imminent core melt.

* Other emergency conditions that require an emergency response are those involving:

a. Incident reporting per 10 CFR 50.72.
b. Hazardous material incident reporting per P.A. 79-1442.
c. Oil discharges to waterways per the SPCC Plan.
d. Security contingency events per the Station Security Plan.

The Station Director may, at his discretion, categorize the above situations as GSEP emergencies, depending upon the seriousness of the situation. (Refer to Section 9.3 of the generic plan for additional information.)

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NOTIFICATION OF RESPONSIBLE AUTHORITIES

310-0 Notification of Responsible Authorities	Rev. 13	05-20-83
310-1 Initial Notification	Rev. 5	03-31-83
310-T1 Guidance for Augmentation of the On-Site Emergency Organization within 30 Minutes	Rev. 6	05-20-83
310-T2 State of Illinois Nuclear Accident Reporting System Form	Rev. 1	04-01-81
310-T3 Prioritized Notification Listing	Rev. 7	05-14-83

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GUIDANCE FOR AUGMENTATION OF THE ON-SITE EMERGENCY ORGANIZATION WITHIN 30 MINUTES

QEP 310-T1
Revision 6
May 1983

AUGMENTATION WITHIN 30 MINUTES			
FUNCTIONAL AREA	TRANSPORTATION ACCIDENT & UNUSUAL EVENT	ALERT	SITE & GENERAL EMERGENCY
1. Command & Control	Notification Only		
Station Director	1	1	1
Oper Director	1	1	1
Maint Director	*1	1	1
Tech Director	*1	1	1
Admin Director	*1	*1	1
Stores Director	*1	*1	1
Rad./Chem. Director	*1	1	1
Security Director	*1	*1	1
Environs Director	*1	1	1
2. Notifications & Communications			
3. Accident Assessment			
Off-Site (RC)		*2	4
On-Site (RC)		*1	1
In-Plant (RC)		*1	1
Rad./Chem. (Lab) (RC)		*1	1
4. Technical Support			
Nuclear (Core) (TS)		*1	1
Electrical (TS)		*1	1
Mechanical (TS)		*1	1
5. Repair & Correction			
Mechanical (M)		*1	1
Electrical (M)		*1	1
Radwaste		*1	1
Inst. & Control (M)		*1	1
6. Protective Actions			
Radiation Protection (RC)		*2	4
TOTALS	*2-9	*7-24	28

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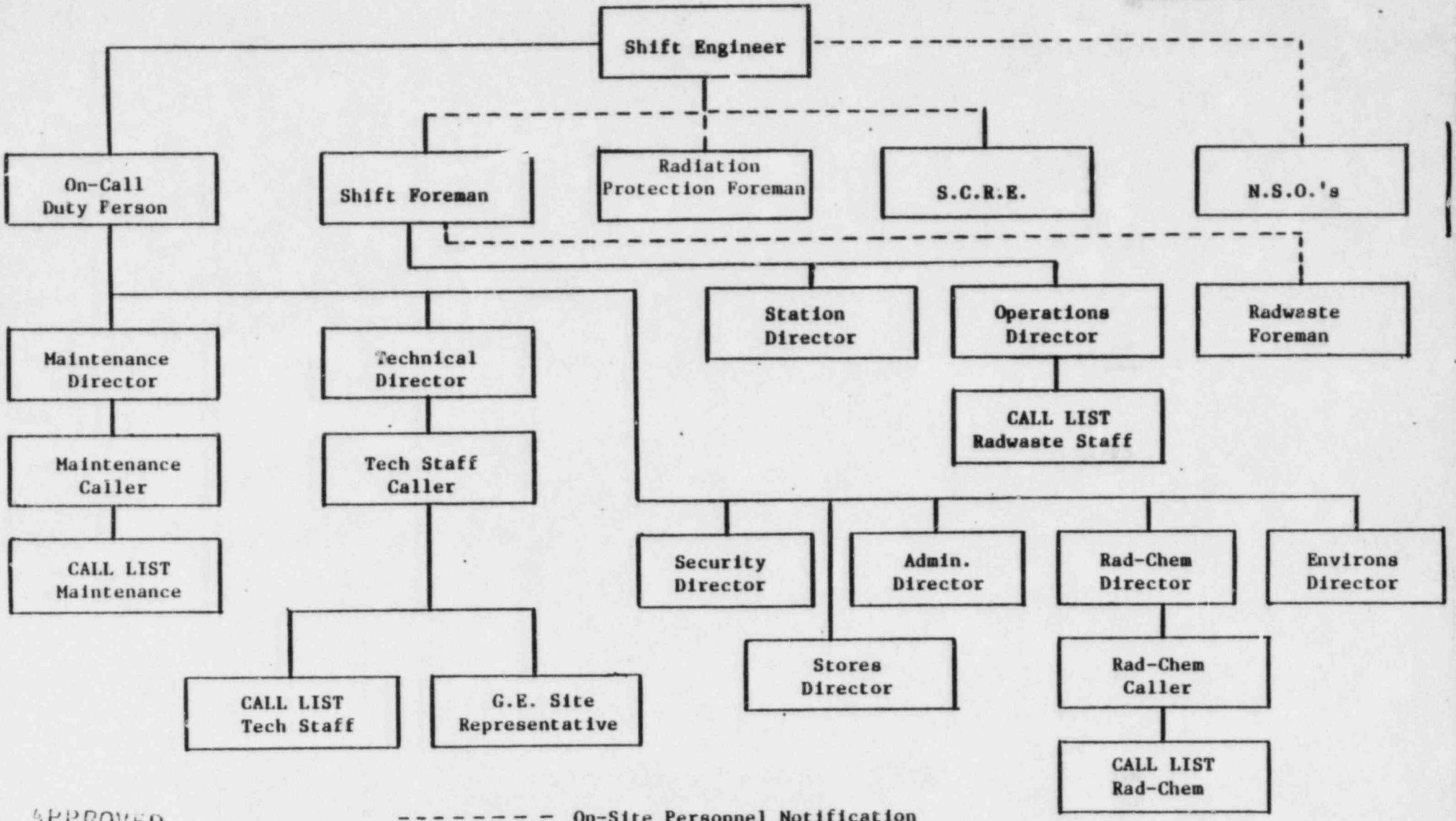
*As needed depending upon the nature of the emergency.
(M) Maintenance Caller
(TS) Tech Staff Caller
(RC) Rad-Chem Caller

NOTE: Additional support in the areas of Command & Control; Communications; and Accident Assessment will be available from the Corporate Command Center Staff. It is reasonable to expect partial manning of the CCC within 30 minutes for the Site & General Emergencies.



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QEP 310-T3
Revision 7
May 1983

PRIORITIZED NOTIFICATION LISTING

ID/5A

	TIME CONTACTED	EST. TRAVEL TIME
ON-CALL DUTY PERSON		
Name — Home Phone		
R. L. Bax — [redacted]		
F. J. Geiger		
L. F. Gerner		
R. A. Robey		
G. F. Spedl		
T. K. Tamlyn		
G. C. Tietz		
STATION DIRECTOR		
Name — Priority — Home Phone		
N. J. Kalivianakis — 1 — [redacted]		
T. K. Tamlyn — 2		
L. F. Gerner — 3		
R. L. Bax — 4		
OPERATIONS DIRECTOR		
Name — Priority — Home Phone		
T. K. Tamlyn — 1 — [redacted]		
R. A. Robey — 2		
G. F. Spedl — 3		
F. J. Geiger — 4		

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	TIME CONTACTED	EST. TRAVEL TIME
TECHNICAL DIRECTOR		
Name — **Priority** — **Home Phone**		
G. C. Tietz — 1 — [redacted]		
J. H. Schnitzmeyer — 2		
H. G. Lihou — 3		
MAINTENANCE DIRECTOR		
Name — **Priority** — **Home Phone**		
G. R. Price — 1 — [redacted]		
D. G. Rajcevich — 2		
D. G. Van Pelt — 3		
*R. L. Bax — 4		
STORES DIRECTOR		
Name — **Priority** — **Home Phone**		
L. G. Butterfield — 1 — [redacted]		
S. L. Simpson — 2		
D. L. Noe — 3		
ADMINISTRATIVE DIRECTOR		
Name — **Priority** — **Home Phone**		
D. M. O'Connor — 1 — [redacted]		
F. B. Faley — 2		
Z. A. Rudy — 3		

*This person should be notified first, even though he is unable to be on-site within 30 minutes. Then, notify the Maintenance Director by priority to come to the site to augment the Station staff.

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	TIME CONTACTED	EST. TRAVEL TIME
SECURITY DIRECTOR Name / Priority / Home Phone G. J. Toleski — 1 J. R. Wunderlich — 2 K. L. Leech — 3 [redacted]		
RAD-CHEM DIRECTOR Name / Priority / Home Phone T. J. Kovach — 1 J. W. Piercy — 2 W. A. Bielasco — 3 [redacted]		
ENVIRONS DIRECTOR Name / Priority / Home Phone R. L. Carson — 1 J. E. Sirovy — 2 M. A. Frazier — 3 [redacted]		
MAINTENANCE CALLER (These personnel may be used to augment the Maintenance Director list above.) Name / Home Phone J. F. Fish J. J. Kopacz D. F. Thayer H. W. Wilson [redacted]		X

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	TIME CONTACTED	EST. TRAVEL TIME
TECH STAFF CALLER (These personnel may be used to augment the Technical Director list above.) **Name** — **Home Phone** D. G. Clark D. W. Jessen J. R. Wunderlich B. R. Strub		
RAD-CHEM CALLER (These personnel may be used to augment the Rad-Chem or Environs Director lists above, or the Rad-Chem Call List on page 6.) **Name** — **Home Phone** R. L. Moore J. W. Piercy A. G. Schabilion P. Skiermont R. D. Tank T. D. Bush A. P. O'Horo M. S. Zinnen J. R. Dishman		
ELECTRICAL MAINTENANCE CALL LIST **Name** — **Priority** — **Home Phone** D. G. Van Pelt — 1 R. J. Vess — 2 B. J. Maze — 3 W. A. Krause — 4 D. L. Meyer — 5 H. W. Chrisman — 6 C. W. Elsasser — 7		

	TIME CONTACTED	EST. TRAVEL TIME

MECHANICAL MAINTENANCE CALL LIST

Name	Priority	Home Phone
G. R. Price	1	[redacted]
D. F. Thayer	2	
F. D. Delk	3	
J. F. Fish	4	
H. W. Wilson	5	
J. J. Kopacz	6	
R. C. Schofield	7	
J. E. Koenes	8	
J. A. Weaver	9	
G. L. Hayes	10	
T. B. Pettit	11	
C. L. Edmondson	12	
K. E. Sondgeroth	13	
G. B. Hattan	14	
G. L. Donoho	15	
M. A. Jurgensen	16	
W. A. Pottenger	17	
J. E. Petryshyn	18	
D. F. Blaufuss	19	

INSTRUMENT MAINTENANCE CALL LIST

Name	Priority	Home Phone
D. G. Rajcevich	1	[redacted]
M. R. Blann	2	
R. P. Soenksen	3	
C. L. Richardson	4	
A. J. Schmidt	5	

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	TIME CONTACTED	EST. TRAVEL TIME

RAD-CHEM CALL LIST

Name	Priority	Home Phone
L. P. Geerts	1	[redacted]
P. M. O'Brien	2	
M. J. Hesse	3	
G. D. Rankin	4	
J. C. Rasso	5	
J. L. Woods	6	
M. E. Field	7	
S. D. Workman	8	
D. E. Bielema	9	
J. L. Frechette	10	
J. W. Rosenow	11	
J. J. Daubard	12	
T. M. De May	13	
D. H. Frazier	14	
S. R. Weber	15	
R. L. Cadogan	16	
W. F. Schmidt	17	
D. C. Wright	18	
L. C. Williams	19	
J. R. King	20	
D. L. Heitzler	21	
K. D. Anderson	22	
C. R. Brown	23	
M. H. Curtis	24	
G. R. Webster	25	

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	TIME CONTACTED	EST. TRAVEL TIME

TECH STAFF-NUCLEAR CALL LIST

Name	Priority	Home Phone
B. R. Strub	1	[redacted]
M. L. Reed	2	
K. P. Donovan	3	
P. D. Knoespel	4	
J. P. Hoeller	5	

TECH STAFF-MECHANICAL/ELECTRICAL CALL LIST

Name	Priority	Home Phone
D. G. Clark	1	[redacted]
C. A. Hebel	2	
S. W. Reynolds	3	
J. B. Eagle	4	
D. B. Cook	5	
K. K. Medulan	6	
F. R. Kaeppel	7	
E. E. Mendenhall	8	
C. A. Iben	9	
P. D. Todd	10	

TECH STAFF-SPECIAL PROJECTS CALL LIST
(May be used to augment the M/E list above.)

Name	Priority	Home Phone
J. R. Wunderlich	1	[redacted]
D. L. Wilgus	2	
D. W. Jessen	3	
E. B. Weinfurter	4	
R. D. Buss	5	
A. L. Misak	6	
G. T. Carney	7	
W. L. Leaverton	8	
R. K. Rustick	9	

	TIME CONTACTED	EST. TRAVEL TIME
G. E. SITE REPRESENTATIVE Name — Home Phone D. Brager — [redacted]		
RADWASTE CALL LIST Name — Priority — Home Phone J. W. Forrest — 1 R. N. Jackson — 2 G. W. Klone — 3 R. J. Thompson — 4 A. A. Griffiths — 5 R. L. Petri — 6 H. E. Gnoske — 7 M. J. Fecht — 8 — [redacted]		

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