SOUTHERN COMPANY

Energy to Serve Your World℠

FNP-153-NRC-DC DESK
SEPTEMBER 20, 2002

DIRECTOR, OFFICE OF NRC
ATT: DOCUMENT CONTROL DESK
C/O JIM MCKNIGHT
US NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555

DEAR SIR,

ATTACHED ARE NEW REVISIONS FOR THE FOLLOWING PROCEDURES. PLEASE REPLACE YOUR COPY WITH THE ATTACHED REVISED COPIES.

FNP-0-EIP-14.0 VERSION 16

FNP-0-EIP-15.0 VERSION 23

IF YOU HAVE ANY QUESTIONS PLEASE CALL ME AT 334-899-5156 EXTENSION 3439.

SINCERELY,

JOEY HUDSPETH

DOCUMENT CONTROL SUPERVISOR

DCH·llb
CC: FILE
RTYPE A4.54

Memo Disk 3 – NRC

A045

SHARED

FARLEY NUCLEAR PLANT

EMERGENCY PLAN IMPLEMENTING PROCEDURE

FNP-0-EIP-14.0

SAFETY RELATED

PERSONNEL MOVEMENT, RELOCATION, RE-ENTRY AND SITE EVACUATION

PROCEDURE USAGE REQUIREMENTS per FNP-0-AP-6	SECTIONS
Continuous Use	
Reference Use	ALL
Information Use	

Approved:

J. R. Johnson for

Nuclear Plant General Manager

[redacted]

Date Issued 9-19-02

LIST OF EFFECTIVE PAGES

PROCEDURE CONTAINS	NUMBER OF PAGES
Body	7
Table 1	1
Table 2	1
Figure 1	1
Figure 2	1
Figure 3	4
Figure 4	1
Figure 5	1
Figure 6	1

PERSONNEL MOVEMENT, RELOCATION, RE-ENTRY AND SITE EVACUATION

TABLE OF CONTENTS

PERSONNEL MOVEMENT, RELOCATION, RE-ENTRY AND SITE EVACUATION

1.0 Purpose

This procedure provides the guidelines for movement, relocation, re-entry and evacuation of personnel after the initial sounding of the plant emergency alarm. A fire emergency shall be considered a special re-entry and procedures for re-entry during this type of emergency are addressed in FNP-0-EIP-13.0, Fire Emergencies.

2.0 References

See Table 1

3.0 Definitions

3.1 Movement

Personnel movement within the same assembly area building

e.g. Service Building Auditorium to Document Control

Visitors Center Auditorium to EOF

3.2 Relocation

a. The transfer of an individual (includes re-assigning designated assembly area) from one assembly area to another.

e.g. Service Building Auditorium to Visitors Center Auditorium

Service Building Maintenance Shop to TSC

b. Assignment of personnel from their assembly area to a location (non-assembly area) in the plant or on the plant site.

e.g. Control Room to Radiochemistry Labs

Service Building Auditorium to WTP

3.3 Re-entry

Entry into an area of elevated personnel hazards due to an emergency condition.

e.g. Entry into the piping penetration room to isolate an ECCS leak following a major loss of coolant accident

Entry into an area where the TEDE whole body annual dose limit of 5 rem can be exceeded during the expected time to perform the job (normally 30 minutes can be assumed to perform the job)

3.4 Site Evacuation

Organized withdrawal of personnel offsite.

4.0 Exemptions to the Guidance of This Procedure

4.1 Radiation Monitoring Teams (RMTs) are not required to be tracked or be authorized to move from one location to another by this procedure.

4.2 Personnel reporting to the site for duties in the TSC, EOF or the OCS are not required to be tracked or be authorized to report to their designated emergency response facility.

4.3 When the Emergency Director has Security informed of the emergency classification, he will inform Security of any access route restrictions, if necessary. Security will be issued a controlled copy of the on call memo for Security Post Gate 95 North and Security Post Gate 95 South. Personnel on the on-call memo, in any position or as an alternate, will be granted access to the site during an emergency unless specifically restricted by the Emergency Director.

4.4 Security will inform arriving personnel of access route restrictions, if necessary.

4.5 Personnel moving between the Control Room and the TSC are not required to be tracked or authorized by this procedure.

4.6 Personnel moving between the TSC and the breakroom outside the TSC are not required to be tracked or authorized by this procedure, unless the HP Manager has determined that a hazardous condition exists in the breakroom.

4.7 Personnel in the protected area delivering accountability logs to the PAP or the SAP are not required to be authorized by this procedure, but should be tracked by the senior individual in their assembly area.

5.0 Requirements for Movement

5.1 The senior individual in the assembly area shall authorize the movement of personnel.

5.2 The senior individual or his designee in the assembly area shall be responsible for tracking the movement of personnel.

6.0 Requirements for Relocation

6.1 The senior individual in the assembly area shall authorize the relocation of personnel, when requested to relocate individuals by the TSC, OSC or EOF.

6.2 The relocation guideline/log (Figure 1/2) may be used as a tracking mechanism for relocations.

6.3 The Control Room/TSC/OSC/EOF will inform the senior individual of any personnel hazards (toxic gas, radioactive release, etc.) that may exist. The senior individual in the assembly area shall provide a transit route for the relocation as appropriate.

6.4 Personnel who are being relocated from one designated assembly area to another designated assembly area will be tracked by the senior individual in the assembly area from which they are departing, until arrival at the new assembly area.

6.5 Personnel who are being relocated to an area outside of a designated assembly area will be tracked by the Control Room/TSC prior to the arrival of the OSC Manager, who will then have the responsibility.

6.6. Tracking and authorization for relocations involving personnel in the TSC/Control Room/OSC will be performed by the OSC Manager. If the OSC Manager is unavailable, the relocation responsibilities may be performed by the Maintenance Manager or Control Room.

6.7 Personnel who have been relocated outside of an assembly area will report to their assembly area, should the plant emergency alarm resound--unless specifically authorized to remain on station by the ED.

6.8 The following applies to security, regarding relocation of personnel:

6.8.1 Remain on station until relocation is required.

6.8.2 When relocation becomes necessary, security supervision shall:

- Determine the route, with assistance from Control Room/TSC/OSC (Shift Supervisor/Maintenance Manager, or OSC Manager)
- Implement appropriate compensatory measures.
- Inform the ED of the compensatory measures taken.

6.9 Exposure limits for a re-location shall be limited to five rem TEDE, including the current dose to date.

6.9.1 Exposures in excess of one rem for a relocation, exclusive of current dose, shall be approved by the HP Manager, or the ED in his absence.

6.9.2 If an internal hazard is present, the limit for the relocation should be reduced by a factor of two.

7.0 Requirements for Re-entry - General Guidance

7.1 TLD badges of personnel who receive an emergency exposure in excess of the 10CFR20 limits of step 7.10 will be pulled and read prior to receiving further non-emergency exposure.

7.2 Re-entry personnel shall not deviate from a planned route unless unanticipated conditions such as rescue, performing an operation which would minimize the emergency condition, etc., require such a deviation.

7.3 If emergency dose rates observed during re-entry exceed the limits established by the re-entry guideline or other adverse conditions are encountered, re-entry personnel shall return to a safe area and contact the OSC/TSC/Control Room for further instructions.

7.4 If the Plant Emergency Alarm (PEA) is sounded while a re-entry team is involved in their assigned tasks, the re-entry team shall call the Control Room/TSC/OSC and request further instructions for assembly requirements.

7.5 The re-entry guideline/log (Figures 3/4) will serve as a tracking mechanism for re-entries. One copy of the guideline will remain with the OSC and, if desired, another copy will be given to the re-entry team leader. The guideline may be photocopied, or a two-part form may be used. The re-entry guideline will be sequentially numbered.

7.6 Individuals listed on the re-entry guideline as responsible for completion of guideline items are not required to personally initial the guideline, but are responsible for ensuring that each requirement is performed and initialed by the person performing or ensuring performance of the task.

7.7 Radiological monitoring will be established for each re-entry. The following parameters will be considered when determining the degree of radiological monitoring:

- Releases in progress
- Dose rates, airborne and contamination levels
- Stability of plant radiological conditions

7.8 Re-Entry is the responsibility of the Emergency Director, and requires verbal ED approval to execute a re-entry. Re-entries may be authorized and executed by the OSC Manager or Maintenance Manager, with ED approval. Approval to exceed 10CFR20 radiation exposure limits listed in step 7.10 must be approved by the Emergency Director. Approval to exceed plant administrative dose limits listed in step 7.10 must be approved by the HP Manager, or the Emergency Director in the HP Manager's absence.

7.9 An Emergency Repair Party which functions as a re-entry team shall consist of at least two (2) persons.

7.10 Farley Nuclear Plant personnel who have completed the onsite radiation protection training may be required to receive an exposure up to the following 10CFR20 limits:

	10CFR20 limit	Administrative limit
Whole body (TEDE)	- 5 rem	- 2 rem
Lens of the eyes	- 15 rem	- 6 rem
Skin of the whole body	- 50 rem	- 20 rem
Extremities	- 50 rem	- 20 rem
Internal organs	- 50 rem	- 20 rem

7.11 Dosimetry records for potential re-entry team members are available in the Dosimetry Lab.

CAUTION: EMERGENCY EXPOSURE LIMITS SHALL ONLY BE AUTHORIZED BY THE E.D.

7.12 Emergency situations may transcend the normal requirement of maintaining personnel exposures below 10CFR20 limits, as noted in step 7.10. Emergency exposures shall be minimized to every degree practicable. Farley Nuclear Plant personnel who have completed the onsite radiation protection training may be required to receive an exposure up to 25 rem TEDE for the activity and conditions described below. For those same personnel to receive in excess of 25 rem, they must voluntarily agree to receive an emergency dose in excess of 25 rem, but less than 100 rem. Persons volunteering to receive in excess of 25 rem must be made fully aware of the risks involved. Emergency exposure limits are as follows:

TEDE DOSE 10 REM	ACTIVITY PROTECTING VALUABLE PROPERTY	CONDITION LOWER DOSE NOT PRACTICAL
25 REM	LIFE SAVING OR PROTECTION OF LARGE POPULATIONS	LOWER DOSE NOT PRACTICAL
>25, <100 REM	LIFE SAVING OR PROTECTION OF LARGE POPULATIONS	VOLUNTEERS ONLY THAT ARE FULLY AWARE OF THE RISKS INVOLVED
Limit the dose to the lens of the eyes to 3 times the listed value. Limit the dose to other organs, including skin and extremities to 10 times the listed values.		

NOTE: THERE IS CURRENTLY NO METHOD AVAILABLE TO ASSESS INTERNAL EXPOSURE ON A REAL TIME BASIS; THEREFORE, FARLEY NUCLEAR PLANT WILL UTILIZE AN ADMINISTRATIVE DEFAULT CORRECTION FACTOR OF TWO TO RELATE DEEP DOSE TO EXTERNAL EXPOSURE.

7.13 If an internal hazard is present, the limit for the re-entry should be reduced by a factor of two, unless a compensatory measure has been used to eliminate the internal hazard.

8.0 Requirements for Re-entry - Specific Guidance

8.1 The Emergency Director must verbally approve all re-entries.

8.2 The ED must approve doses that exceed the 10CFR20 limits of step 7.10.

8.3 The HP Manager or ED will complete the applicable portions of section II of the re-entry Guideline.

8.4 The HP Manager or designee will complete section IV of the Re-Entry Guideline.

8.5 The OSC Manager or Maintenance Manager (or ED, if OSC and Maintenance Manager are not available) will coordinate the re-entry and complete sections III and VI of the Re-Entry Guideline.

8.6 Re-Entry personnel shall:

8.6.1 Don necessary protective/emergency clothing and devices as prescribed in the re-entry guideline.

8.6.2 Perform assigned duties in the emergency area as quickly and safely as possible.

8.6.3 Report to the OSC Manager or TSC staff any unexpected conditions which may seriously affect their assigned duties.

8.6.4 Without delaying the mission or causing unnecessary exposures, monitor the dose rate along the route followed to obtain radiological information, as appropriate.

8.6.5 Frequently observe personal dosimeters and withdraw to a safe area prior to reaching an established dose limit, as applicable.

8.6.6 Upon exiting, follow established self-monitoring and personnel decontamination procedures, as necessary, under the supervision of the individual charged with health physics monitoring.

8.6.7 Record and report to the OSC Manager or TSC staff the radiological conditions, damage assessments, or any actions taken in the emergency area.

8.6.8 Complete applicable sections of the re-entry guideline.

9.0 Site Evacuation

9.1 Emergency Director shall authorize site evacuation.

9.2 Evacuation routes must be planned and communicated to appropriate personnel (Figures 5 and 6 may be used as guidance). The roads leading to the north and south gates may have road blocks in place to prevent unauthorized access. Contact security to open access to these routes if they will be used. Access can be opened rapidly if it is required.

9.3 When the order to evacuate the site is issued, non-essential personnel inside the controlled area shall proceed to the CSC for monitoring prior to being released from the site.

9.4 When the order to evacuate the site is issued, non-essential personnel outside the controlled area shall report to or remain in their designated assembly for monitoring prior to being released from the site.

9.5 The Emergency Director or designee will designate on-site evacuation routes and confer with off-site authorities (if available) to designate offsite evacuation routes. Figure 5 shows on-site evacuation routes. Figure 6 shows offsite evacuation routes.

9.6 Health Physics technicians will monitor personnel at the CSC or assembly area outside the controlled area and release them for evacuation from the site. If the monitoring area is unsuitable due to background radiation levels, the HP technician and a security force member will escort the personnel to a suitable monitoring area.

9.7 Personnel or equipment found to be contaminated will be returned to the plant for de-contamination or routed to one of the following de-contamination facilities with the concurrence of Houston County EOC or the Early County EOC.

9.7.1 Houston County Rescue Squad Building (located on the Enon to Webb road, approximately 10 miles West of the plant site)

9.7.2 Houston County Farm Center (cattle barn)

9.7.3 Early County High School

9.8 Personnel found not to be contaminated will evacuate the site using the designated routes determined in step 9.5.

PERSONNEL MOVEMENT, RELOCATION, RE-ENTRY
AND SITE EVACUATION

REFERENCES

- Joseph M. Farley Nuclear Plant Emergency Plan
- EPA Emergency Worker and Lifesaving Activity Protective Action Guide
- IE Information Notice No. 84-40: Emergency Worker Doses
- NCRP No. 91
- SNC EPA 400 Manual Interpretation Document
  J. D. Woodard to D. N. Morey, June 7, 1994

PERSONNEL MOVEMENT, RELOCATION, RE-ENTRY AND SITE EVACUATION

RISKS ASSOCIATED WITH ACUTE HIGH LEVEL RADIATION EXPOSURE

HEALTH EFFECTS ASSOCIATED WITH WHOLE BODY ABSORBED DOSES RECEIVED WITH A FEW HOURS*

WHOLE BODY ABSORBED DOSE (RAD)	Forewarning Symptoms of More Serious Health Effects Associated with Large Doses of Radiation (PERCENT AFFECTED)
50	2%
100	15%

APPROXIMATE CANCER RISK TO AVERAGE INDIVIDUALS FROM 25 REM EFFECTIVE DOSE EQUIVALENT, DELIVERED PROMPTLY*

AGE AT EXPOSURE (YEARS)	APPROXIMATE RISK OF PREMATURE DEATH (DEATHS PER 1,000 PERSONS EXPOSED)	AVERAGE YEARS OF LIFE LOST IF PREMATURE DEATH OCCURS (YEARS)
20 TO 30	9.1 (.91%)	24
30 TO 40	7.2 (.72%)	19
40 TO 50	5.3 (.53%)	15
50 TO 60	3.5 (.35%)	11

PROMPT EFFECTS OF ACUTE RADIATION EXPOSURE**

ACUTE DOSE REM	PROBABLE CLINICAL EFFECT
0-25	No observable effects.
25-100	Slight blood changes, no other observable effects.
100-200	Vomiting may occur in 5 to 50% within three hours, with fatigue and loss of appetite. Moderate blood changes are likely. Except for the blood forming organs, recovery will occur in essentially all cases within a few weeks.

* REFERENCE EPA 400 MANUAL
** REFERENCE INPO GUIDANCE

RELOCATION GUIDELINE

RELOCATION #_____

DESCRIPTION: _____

RELOCATION FROM: _____

RELOCATION TO: _____

DUTIES: _____

_____

ESTIMATED TIME TO COMPLETE: _____

TRANSIT ROUTE: _____

_____

HP REQUIREMENTS: THE MAXIMUM ALLOWED DOSE FOR THE RE-ENTRY IS FIVE REM, INCLUDING PREVIOUS EXPOSURE FOR THE YEAR.

IF AN EXTERNAL HAZARD IS INVOLVED, EXTERNAL DOSE LIMIT SHOULD BE REDUCED BY A FACTOR OF TWO.

DOSE LIMIT:_____ HP MGR/ED APPROVAL IF >1 REM:_____
(N/A IF NO RAD HAZARD)

OTHER HP REQ:_____

_____

_____

PERSONNEL:_____ _____

_____ _____

_____ Continued on Additional Sheet

APPROVAL:_____

TIME OUT:_____ TIME IN:_____

CALL BACK PHONE NUMBER:_____

COMMENTS:_____

_____

SHARED

RELOCATION LOG

SHEET #_____

#	DESCRIPTION	TIME Start Re-Loc	TIME Return from Re-Loc

RE-ENTRY GUIDELINE

RE-ENTRY FOR:_____RE-ENTRY #_____
UNIT #_____ DATE/TIME_____/_____

NOTE: THE STEPS OF THIS GUIDELINE MAY BE DONE IN ANY ORDER PRIOR TO DISPATCHING THE RE-ENTRY TEAM.

OSC MANAGER SECTION I

_____A. Obtain ED verbal approval for the reentry.
OSC MGR

_____B. Select qualified personnel for the re-entry.
OSC MGR
*team leader *_____ _____ _____
_____ _____ _____

_____C. Specify duties for re-entry:
OSC MGR (notes if desired)_____
_____
_____
_____
_____
_____

_____D. Specify transit route (discuss):
OSC MGR (notes if desired)_____
_____
_____
_____
_____
_____

_____E. Specify communications and actions
OSC MGR to take if communications cannot be established:
call back number 1._____ 2._____
gaitronics_____
radio_____

_____F. Dispatch re-entry team when HP requirements
OSC MGR per page 2 are met and brief per page 3 is complete.

HEALTH PHYSICS SECTION II

_____A. HP — Specify dose and dose rate limits.

APPROVED DOSE:_____

APPROVED DOSE RATE:_____

_____B. HP MGR — Authorize dose limits less than 10CFR20 limits and greater than admin limits per paragraph 7.10.

_____C. ED — Authorize dose limits greater than 10CFR20 limits in paragraph 7.10.

_____E. HP — Have re-entry personnel complete appropriate sections of re-entry individual exposure record including signing the form if 10CFR20 limits will be exceeded and complete Re-Entry Individual Exposure Record.

_____D. HP — Verify that the approved dose will not cause the individual(s)to exceed FNP HP admin limits unless approved by HP manager or 10CFR20 limits unless approved by the ED.

E. For doses in excess of 25 rem, the following two steps must be performed:

_____ HP MGR — 1. Verify that the individual to receive the dose is a volunteer.

_____ HP MGR — 2. Ensure that the individual to receive the dose has been briefed and is fully aware of the risks involved. (Use table 2 as guidance for the brief.)

_____F. HP MGR — Are Thyro Block (KI) tablets required? ☐yes ☐no (Ref FNP-0-EIP-4.0, Fig 3)

_____G. HP — Specify appropriate protective clothing and monitoring devices.

☐ STREET CLOTHES
☐ STD LABCOAT DRESSOUT
☐ STD CVRALL DRESSOUT
☐ CLOTH ☐ PAPER ☐ PLASTICPICS
☐ SCBA
☐ OTHER RESPIRATOR_____
☐ OTHER_____

☐ SINGLE W/B TLD
☐ MULTIBADGE
EXT TLD ☐ HANDS ☐ FEET
☐ 200MR ☐ 2R ☐ 5R
☐ DAD

_____

_____

COMBINED BRIEF SECTION

Conduct a pre-job brief of the Re-Entry. The following information must be included:

- Duties for the re-entry including required procedures and safe work practices. Reference the OSC managers section and the re-entry duties section.
- Hazards associated with the assigned tasks (Radiological and Non Radiological)
- Dose and dose rate limits while performing the re-entry (per Health Physics section)
- Personnel protective equipment required (per Health Physics section if radiological)
- Isolation and control of energy sources (Clearance)
- Special support needs and precautions
- Transit route. It is acceptable for the team to modify the transit route based on the conditions encountered during the re-entry. If the route is modified, the OSC or control room should be notified as soon as possible if the change places the team in areas that are not on the route.
- Communications and actions to take if communications cannot be established

The following information may be considered in the pre-job briefing:

- Industry experience
- Plant or equipment conditions including potential radiological or industrial safety hazards and precautions
- Each person's job or task assignment
- Expected sequence of events and results
- Problems to be anticipated
- Criteria to be used to stop the evolution
- Contingencies if the evolution is stopped or the expected result is not achieved
- Potential distractions and how they will be minimized
- Housekeeping and fluid system cleanliness requirements
- Chemical control and disposal requirements
- Foreign Material Exclusion (FME) Controls

RE-ENTRY TEAM SECTION

NOTE: IT IS NOT REQUIRED FOR THE RE-ENTRY TEAM TO KEEP A COPY OF THIS FORM WITH THEM DURING THE RE-ENTRY.

_____A. Monitor dose and dose rate and retreat to a safe area if limits are exceeded.
Team

_____B. Report unexpected conditions to the TSC or OSC as applicable.
Team

_____C. Monitor and record dose rates along re-entry route without delaying the
Team mission or causing unnecessary exposure.

_____D. Report to the TSC or OSC as applicable, radiological conditions, damage
Team assessment or any actions taken during the re-entry.

_____E. Perform the task assigned to the re-entry team.
Team

DEBRIEF SECTION

_____A. Debrief re-entry personnel.
OSC MGR

_____B. Report debriefed information to the appropriate staff in the TSC.
OSC MGR

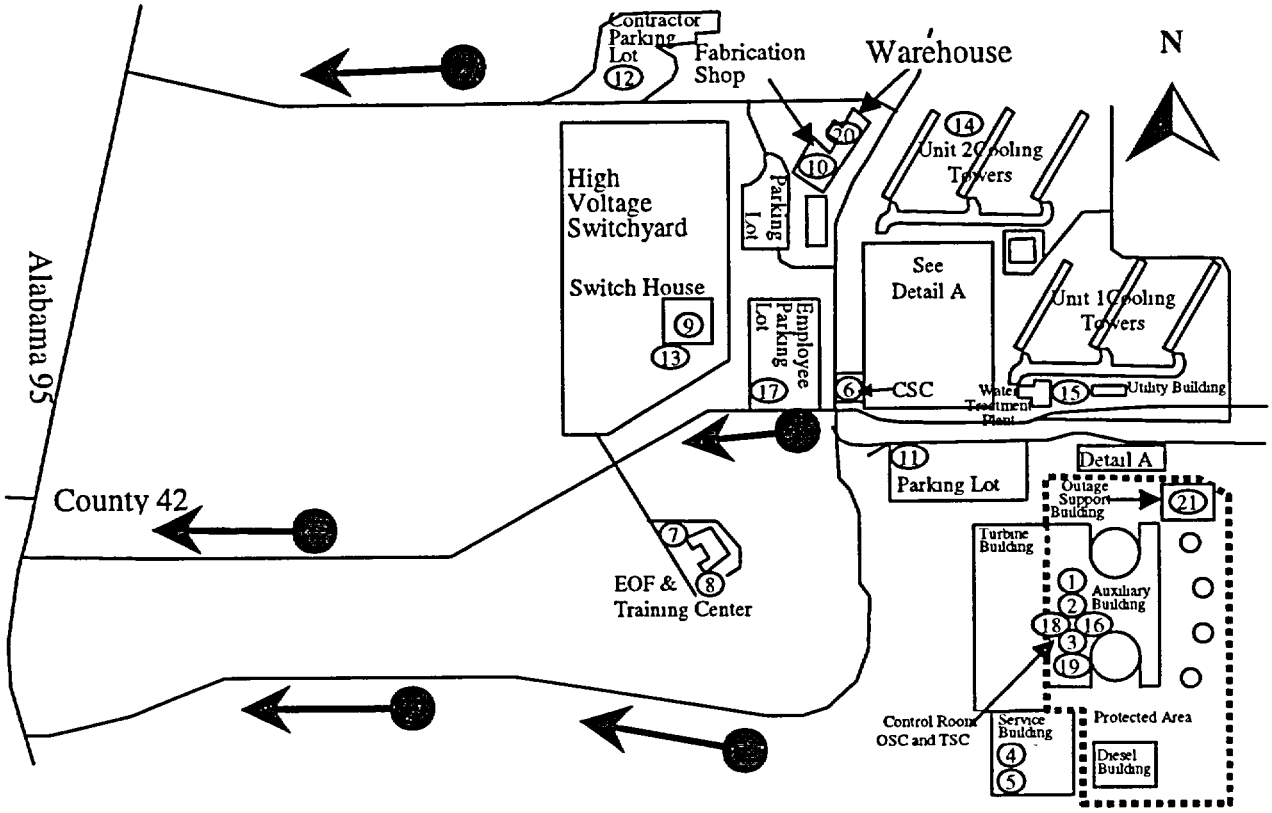
SHARED

RE-ENTRY LOG

SHEET #_____

#	DESCRIPTION	TIME Start Re-entry	TIME Return from Re-entry

ON-SITE EVACUATION ROUTES, ASSEMBLY AREAS, AND OPERATIONS SUPPORT CENTER



LEGEND

OPERATION SUPPORT CENTER

1 BREAKROOM OUTSIDE TSC

ASSEMBLY AREAS

2 CONTROL ROOM
3 TSC
4 SERVICE BUILDING AUDITORIUM
5 MAINTENANCE SHOP
6 CSC
7 VISITORS CENTER AUDITORIUM
8 EOF
9 SWITCH HOUSE
10 FABRICATION SHOP
20 WAREHOUSE RECEIVING AREA
21 OUTAGE SUPPORT BUILDING

ALTERNATE ASSEMBLY AREAS

11 PARKING LOT SOUTH OF S.B.
12 CONTRACTOR PARKING LOT
13 SWITCHHOUSE PARKING LOT
14 BETWEEN 2A & 2B COOLING TOWERS
15 UTILITY BUILDING
16 SE CORNER OF CONTROL ROOM
17 EMPLOYEE PARKING LOT
18 BREAKROOM NEAR PAP
19 HP OFFICE AREA

EVACUATION ROUTES

OFF-SITE EVACUATION ROUTES