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TUCKER,H.B. Duke Power Co.
RECIP.NAME RECIPIENT AFFILIATION
DENTON,H.R. Office of Nuclear Reactor Regulation, Director
STOLZ,J.F. Operating Reactors Branch 4

SUBJECT: Forwards request for exemption from emergency operations facility (EOF) location requirements per Generic Ltr 82-33. Proposed EOF to be located 125 air miles from facility,w/ joint news ctr remaining in Oconee,NC.

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June 3, 1983

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr. John F. Stolz, Chief
Operating Reactors Branch No. 4

Subject: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287

Dear Sir:

By letter dated December 17, 1982 (Generic Letter 82-33), the NRC issued Supplement 1 to NUREG-0737, the purpose of which was to provide additional clarification reqarding, among several items, the Emergency Response Facilities. In Section 8 of the supplement, the NRC provides requirements and guidance relative to Emergency Response Facilities.

Duke requests, pursuant to the above, that an exemption be granted to the location requirements of the Emergency Operations Facility (EOF) for Oconee Nuclear Station.

Option 2 of Table 1 allows use of a single EOF between 10 and 20 miles from the nuclear station. Duke proposes that the EOF for Oconee be located in Charlotte, North Carolina, at the General Office of Duke Power Company, and approximately 125 air miles from Oconee. It should be noted that the Joint News Center will continue to be located at Oconee to allow local, state, and national media a place to obtain official information. Further, the NRC Site Team, which initially responds to the Technical Support Center (TSC), would monitor EOF activities from either the TSC or the NRC Resident Inspector's Office, or by dispatching inspectors to Charlotte.

The known Staff concerns related to locating the EOF are addressed in the attached. Following NRC review of this submittal, Duke would welcome the opportunity to further discuss this justification with the Staff and the Commission.

Very truly yours,

Hal B. Tucker

Hal B. Tucker

RLG/php
Attachment

A003

cc: Mr. James P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW. Suite 2900
Atlanta, Georgia 30303

Mr. J. C. Bryant
NRC Resident Inspector
Oconee Nuclear Station

Mr. John F. Suermann
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Duke Power Company

Request for Exemption to Locate
Emergency Operations Facility
Outside 20 Miles from
Oconee Nuclear Station

I. Introduction and Purpose

Duke Power Company is committed to the protection of the health and safety of the public in all facets of its operations at its nuclear stations. This commitment extends into the plans and procedures developed for use in an emergency. In a recent review of the Emergency Response Facility (ERF) concept being used at Oconee, McGuire, and Catawba, Duke Management determined that the present plans for use of a near-site EOF with a backup should be revised to a centralized EOF concept of operations. Section III of this submittal discusses in detail the reasons for this decision. The purpose of this exemption request is to allow use of the Duke Power Company Charlotte General Office as the EOF for Oconee. The distance between the two facilities (125 air miles) exceeds twenty miles and Commission approval is required. An exemption is not being requested for McGuire and Catawba since they are located 15 to 20 miles away from the General Office in Charlotte and thus fall within existing Commission guidelines for location of an EOF (NUREG-0737, Supplement 1, Table 1, Option 2).

II. Executive Summary

This document provides several points that support the request to locate the Oconee EOF at the General Office of Duke Power, located in Charlotte, North Carolina. The following are brief summaries of the principal points:

1. The main role of the EOF is to take the burden off the plant staff for keeping the state and county emergency organizations informed, for directing dose assessment and field monitoring, for managing the informational needs of the media, interested industry groups, and elected officials, and for supporting the technical system analysis needs of the TSC Staff. By locating the Oconee EOF in Charlotte, each of these activities can be performed as quickly and efficiently, if not better, than by using a facility 125 miles away from the normal work location of the EOF Staff.

2. Whether communicating with someone who is 10 miles away or 125 miles away, if the communications are by telephone, there is no difference. The important consideration is whether or not the functions of the facility can be performed.

3. By operating out of Charlotte rather than near Oconee, EOF activation time is reduced by three hours, people who man the EOF are closer to their day-to-day resources, and utilization of existing capabilities without splitting them to man two facilities is available.

4. Provisions for access of the NRC site team to the station, for the South Carolina liaison in Charlotte, and for the state/county Public Information Team will be made to allow each group to best perform its role.

5. Communications from the Charlotte General Office to the station and to state/county officials are better than those of a facility in the 10 to 20 mile area around the Oconee plan because of the availability of the Duke microwave system and the use of a non-local switch network (Charlotte).

6. Plant data are available more readily in Charlotte than in a facility 10 to 20 miles away from Oconee.

7. It is much less expensive to operate a centralized facility than separate primary and backup facilities for each site.

III. Background

Following the Three Mile Island accident, Duke Power Company formed an Emergency Response Facility Task Force to direct the activities needed to establish Technical Support Centers, Operations Support Centers, and Emergency Operations Facilities for Oconee and McGuire. At that time, they chose to establish a near-site EOF at the Training Centers close to each plant ($\sim$0.5 mile) with a backup facility 10 to 20 miles away. However, they did not establish HEPA filtration systems in the near-site facilities since the cost was very high. During 1980, 1981, 1982, and early 1983, exercises and drills were conducted at these facilities and it became apparent that the potential existed, in a worst case scenario, for evacuation of the near-site facilities. This evacuation would often disrupt an orderly transfer of responsibility to other EOFs. For this reason and the others listed below, a new concept of EOF operations was developed allowing use of the Charlotte General Office as the EOF for all facilities (see Figures 1, 2, 3, and 4). For Oconee, a site 10 to 20 miles away was considered as an alternative EOF; however, the benefits of using the General Office outweighed the perceived value of a facility in this "closer to the site" area. Duke Power Company's April 14, 1983 submittal in response to NUREG-0737 indicates the McGuire/Catawba EOF should be operational in the General Office on July 1, 1983. Upon approval of the Commission to add the Oconee EOF to the General Office, three months will be required to relocate equipment, revise plans and procedures, make emergency response personnel aware of the change, and to test communications between Oconee and the General Office.

IV. Justification for Duke Power Company's Centralized EOF Concept of Operations

In initial discussions with the NRC Staff on this concept of operations it became apparent that several concerns relative to this mode of operation exist. Thus, we will address the Staff concerns for this concept initially and then discuss other benefits we have identified in use of a centralized facility.

The NRC Staff expressed the following concerns:

1. State and local response groups will be unable to access the EOF in Charlotte because of the distance.

2. Data communications are hampered by the distance to Charlotte.

3. Verbal communications between EOF and TSC management as well as support staff lacks redundancy.

4. NRC's site team will not go to Charlotte, yet will impact decision-making.

5. TMI experience shows that the EOF technical support groups must be established near-site in a short amount of time.

6. The only other utility with an approved EOF beyond 100 miles from the plant is TVA-Brown's Ferry. Their exercises have shown it is very difficult to operate from a remote location.

Response:

1. State and Local Response:

   The State of South Carolina, in its emergency plan, designates one liaison to respond to the EOF and to interact with those responsible for off-site minitoring, dose assessment, and for making protective action recommendations. This individual would be able to respond from Columbia, South Carolina, to Charlotte quicker than to the Oconee area and, by the time the South Carolina Forward Emergency Operations Center (FEOC) is established, would be up-to-date on plant and off-site radiological status. The state also dispatches its Public Information Team to the Joint News Center. This News Center will continue to be established at the Oconee Visitors Center and will allow the local, state, and national media a place to get the official source of information in an emergency (communications to this facility and to the Public Spokesman will be discussed later in this section).

   Oconee and Pickens County, South Carolina, are the only counties in the 10 mile Emergency Planning Zone of Oconee Nuclear Station. Their plans require dispatch of the County Public Information Officer (PIO) to the Joint News Center, but there is no liaison to the EOF.

   Thus, the state and local response groups will be able to implement their plans as now written and to respond as called for in the plans more expeditiously if the Oconee EOF is in Charlotte rather than being near-site.

2. Data Communications

The Staff expressed concerns that plant and effluent data would not be available in Charlotte in a timely manner due to the distance from Oconee.

The Duke Power Company Crisis Management Data Transmittal System is described in detail in a formal operators' manual developed for use with that system. Personnel at the NRC headquarters and in the Region II office have been trained in the use of that system. Figure 5 describes its operation. In that system description it should be noted that the plant parameters selected for review are provided by the "ESS VAX" which is the VAX computer in the Charlotte General Office. The datum is available for review in the EOF 5-10 minutes after it is pulled off the OAC onto the floppy disc (i.e., 0900 data are available by 0905 - 0910). This verified, near-real time datum is adequate to support the technical support function of the EOF in that the EOF does not direct the minute-to-minute operations of the plant, but provides mid to long term support to the TSC staff on necessary actions. Figures 6, 7, and 8 describe the format for displays (Fig. 6 & 7) and available OAC data points (Fig. 8). These outputs are now available to Duke personnel in the TSC, EOF, and other General Office locations, to the NRC, state, and vendor staffs. Once the data are printed out on a computer terminal in Charlotte, copies are made and provided to the managers of each group in the EOF.

Communications to the field monitoring teams are provided via a radio/microwave link from the General Office to the Oconee microwave/radio tower. Actual release information is provided via the teams and is used in determining appropriate protective action recommendations.

Thus, plant and effluent data would be provided on as timely a basis at an EOF for Oconee in Charlotte as it would be at a near-site location.

3. Redundancy in Verbal Communications

The Staff expressed concerns that the distance involved would hamper verbal communications channels and that there was insufficient redundancy in types of verbal communications.

The communications channels that would be available to an EOF in Charlotte are as follow:

- o Duke Power Company microwave system
- o Selective Signaling System (for state/county interface primarily)
- o Ringdown from EOF Recovery Manager to TSC Emergency Coordinator
- o Long Distance calls from Charlotte switch network to Oconee
- o Radio System via Duke microwave
- o Bell lines dedicated for specific state interfaces (management, radiological, news)

Redundancy exists for the critical functions of Emergency Management, coordination of radiological and environmental assessments, and for making protective action recommendations as follow:

Emergency Management

Primary: Ringdown from EOF Recovery Manager to TSC Emergency Coordinator and Selective Signaling System
Backup: Microwave or long distance

Coordination of Assessments

Primary: Microwave and radio via microwave
Backup: Long distance Bell lines

Protective Action Recommendations

Primary: Dedicated Bell lines
Backup: Selective signaling system

Thus, sufficient redundancy exists in the communications available from the General Office in Charlotte. Further, with adequate redundancy, if communications are by telephone there is no difference if the parties are 10 to 20 miles apart or 125 miles apart. The key consideration should be whether adequate capability exists to perform the functions of the facility.

4. NRC Site Team

The NRC Staff expressed concerns that the Regional Emergency Response Team will not be able to directly interact with the EOF staff if the EOF for Oconee is in Charlotte.

Region II personnel have indicated their intention to initally respond to the TSC and then, for a near-site EOF, to relocate a portion of the team to the EOF as the situation stabilizes or as they become fully aware of plant conditions.

Provisions are in place for five members of the NRC Site Team in the TSC. This would be continued and the remaining members would be given work space in the Site Inspection office along with sufficient communications to monitor activities in the EOF. Certainly, part of

the Site Team could be dispatched to Charlotte initially (instead of to Oconee) and would provide the ability for closer monitoring of activities. However, if this is not possible, they could remotely monitor EOF activities from the TSC and Site Inspector's office.

5. TMI Experience

The NRC Staff expressed concerns that, based on experience at TMI, EOF technical and management support must be near-site.

Since TMI, emergency response capabilities have improved dramatically. At Duke we have found, through experience in the six exercises and numerous drills conducted since 1980, that the technical groups in the EOF support the TSC in their role of accident assessment and incident mitigation better if they are located in the same area they work in day-to-day and have access to their normal sources of information rather than being at a remote location. This exemption request allows Duke to take this one step further and enables the EOF management to remain in the same location as their technical staff. This reduces the activation time of the EOF by three hours (driving time to Oconee) and does not separate the management from their information sources. Further, since one facility would now be used for all response, training of personnel is simplified, costs are reduced, and the overall ability to support the plant and to perform the functions of the EOF is increased.

6. TVA Experience

The NRC Staff expressed concerns that the exercise experience of TVA-Brown's Ferry has not been favorable due to the excessive distance involved.

Emergency planners at Duke have spoken recently with TVA's staff on this subject to determine any problem areas that have arisen during exercises for Brown's Ferry. The concensus of opinion at TVA is that their exercise experience, in terms of performance of EOF functions has been good. A problem area identified is NRC Site Team interface. However, they are following up to improve this capability.

Other Considerations

Some of the key points concerning viability of a Charlotte EOF for Oconee have been mentioned in the responses to Staff concerns (e.g., interface with federal, state, local response, the ability to access data and communicate to necessary locations, and training/response time/capabilities of the EOF staff operating out of Charlotte). Other considerations that the Commission should be aware of that make the General Office in Charlotte an excellent EOF location are based upon that facility's ability to support the functions of the EOF:

EOF Function--Overall Management--Is Supported by:

1. The selective signaling system (see Figure 9)
   This is the equivalent of a ringdown system but is located on the Duke microwave with short leased Bell lines to state/local response centers. It is used by the EOF's Offsite Radiological Coordination Group to update the counties on the situation prior to arrival of the State. After South Carolina activates its facility at the Clemson Armory, the state uses it to communicate with the counties. After the state is activated, dedicated Bell lines are kept open between the management, radiological health and public information functions to ensure timely updates.

2. The News Center
   This is a joint Duke, state, and county facility located at the Keowee-Toxaway Visitors' Center. The Public Spokesman is a member of Duke's management responsible for providing the single source of official information on the plant condition. The Public Spokesman and the News Director work together with the off-site authorities in determining appropriate news releases, agendas for news conferences, and responses to outside requests for information. To ensure that the News Group is kept up-to-date on the situation and that concerns or problems at the News Center are brought to the attention of the Recovery Manager, two News Staffs will operate. In Charlotte, the News Staff will continuously monitor operations in the Recovery Manager's room, will develop news releases for approval, and will channel information to the Public Spokesman at the News Center. At the near-site news center, the Staff will register representatives of the media, will provide them copies of the news releases and will coordinate with the state and county PIOs their needs for information on plant conditions. Radiological monitoring will be provided for that facility.

   A dedicated Bell line hook-up will be provided between the General Office News Director and the near-site News Director and Public Spokesman.

   These steps will ensure that support function to overall emergency management adequately provides for the informational needs of the public through the local and national media.

3. Keeping management and technical staff together
   This has been mentioned previously but warrants emphasis as this is a key point. In reducing activation time of the CMC by three hours and in keeping the EOF group intact in an area they use day-to-day, support for the plant personnel, for the needs of the public, states, and counties is improved. It is not logical to travel three hours to a point near Oconee and communicate with plant personnel and the state and counties by phone. With proper pre-planning of needs, the telephone interface can be done in Charlotte more quickly, effectively, and cost-beneficially.

EOF Function--Protective Action Recommendations--Is Supported by:

1. Data evaluation capability (See part IV.2)
2. Dedicated Bell lines to State Director and Radiological Health (See part IV.3)
3. Dose Assessment line from EOF to TSC for data support
4. Selective signaling system (See part IV.3)

Clearly, the ability to receive and analyze the data, develop a recommendation, and provide that recommendation to off-site authorities exists in the EOF at the General Office.

EOF Function--Coordination of Radiological Environmental Assessments--Is Supported By:

1. Radio link to field monitoring teams (See part IV.3)
2. Access to near real time plant effluent parameters via the VAX system (See part IV.2)
3. Dedicated Bell line to state Radiological Health (See part IV.3)
4. Access to South Carolina Radiological Health Liaison in Charlotte (See part IV.1)
5. Dedicated Bell line from EOF dose assessment to TSC-HP (See Part IV.3)

A final consideration is that Duke sends a liaison to the state FEOC to assist them in evaluation of data and messages from the EOF. This individual has an operations background and some knowledge of HP terminology and use of HP practices. This is another necessary step taken to ensure necessary coordination between the state and Duke Power Company.

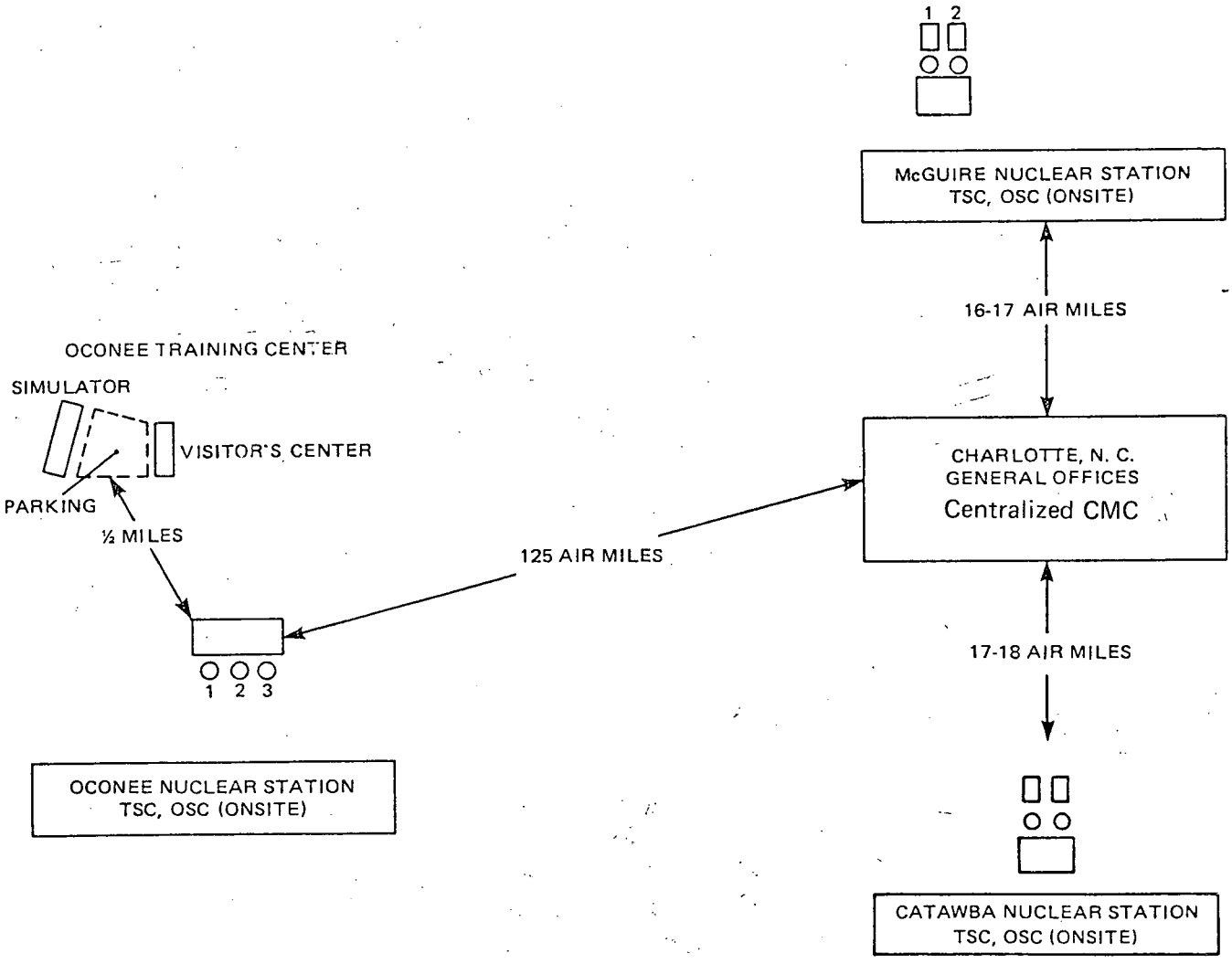
V. Conclusion

In conclusion, this exemption has been provided to request Commission approval of Duke Power Company's intended use of its corporate headquarters in Charlotte, North Carolina as the EOF for Oconee Nuclear Station. The discussion provided in the paper is intended to address known Staff concerns as well as to discuss the ability to perform EOF functins from Charlotte.

Duke Power Company would like to present its justification to the Commission in person as soon as possible. Contact will be made to establish a time and place.

DUKE POWER COMPANY
EMERGENCY RESPONSE FACILITIES

FIGURE 1



DUKE POWER COMPANY
GENERAL OFFICE RESPONSE FACILITIES

FIGURE 2

Oconee/McGUIRE/CATAWBA CMC

GENERAL OFFICE BUILDING LAYOUT - CHARLOTTE, N. C.

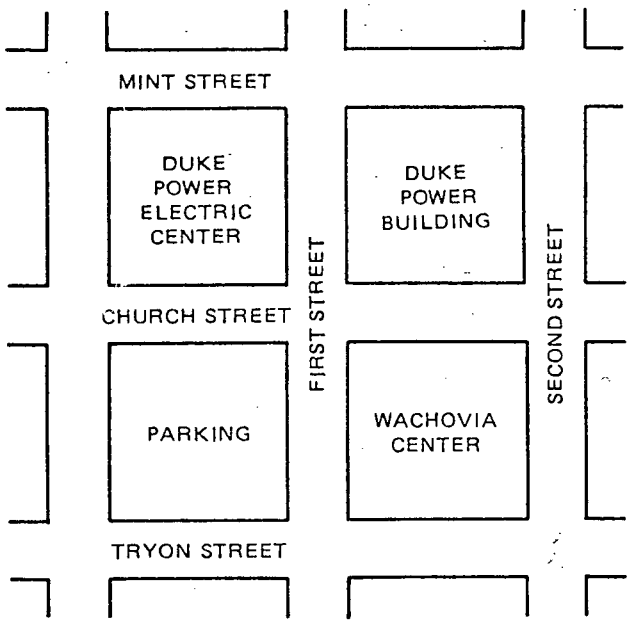
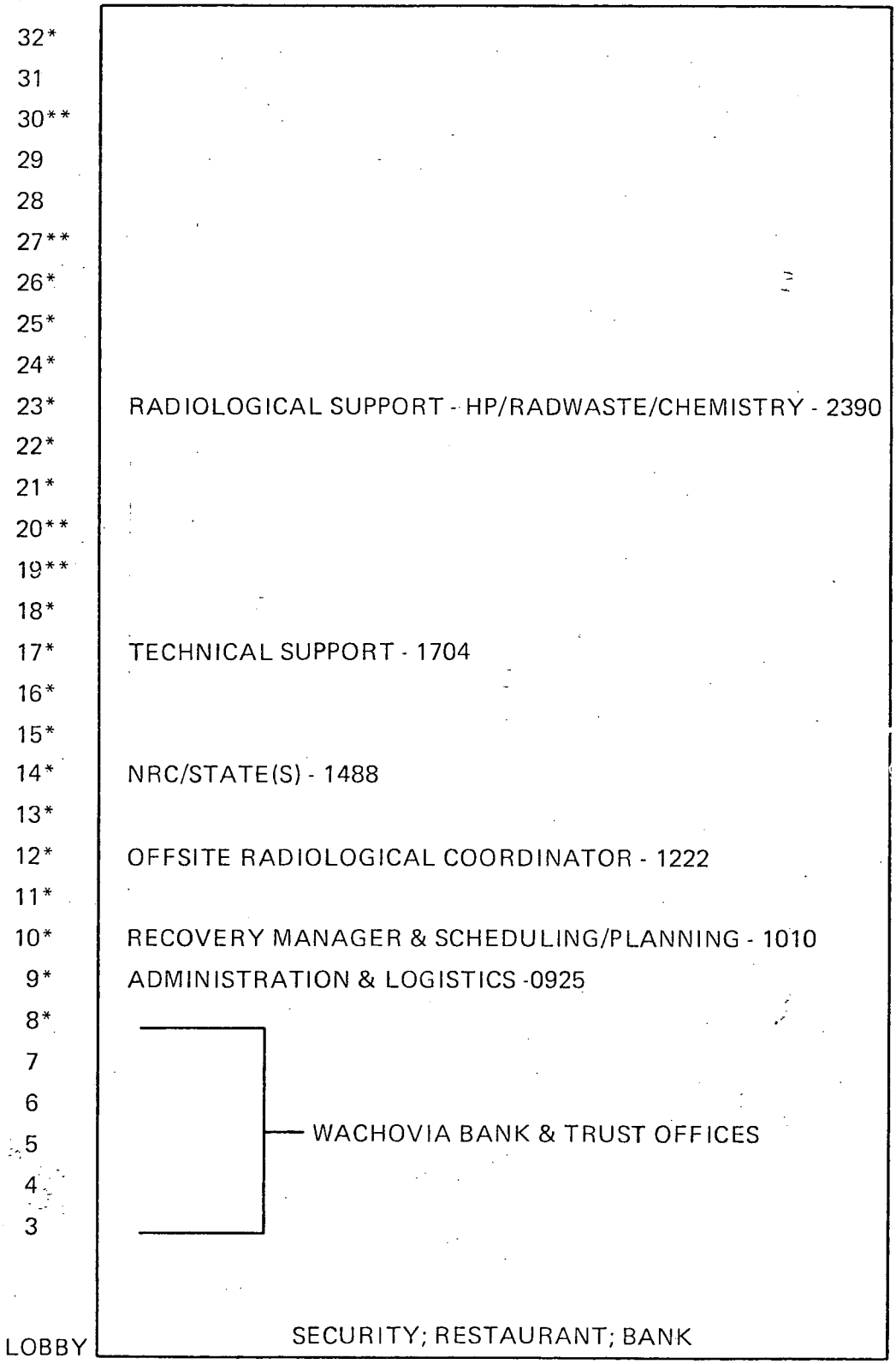


FIGURE 3 - WACHOVIA CENTER LAYOUT - CMC GROUP LOCATIONS



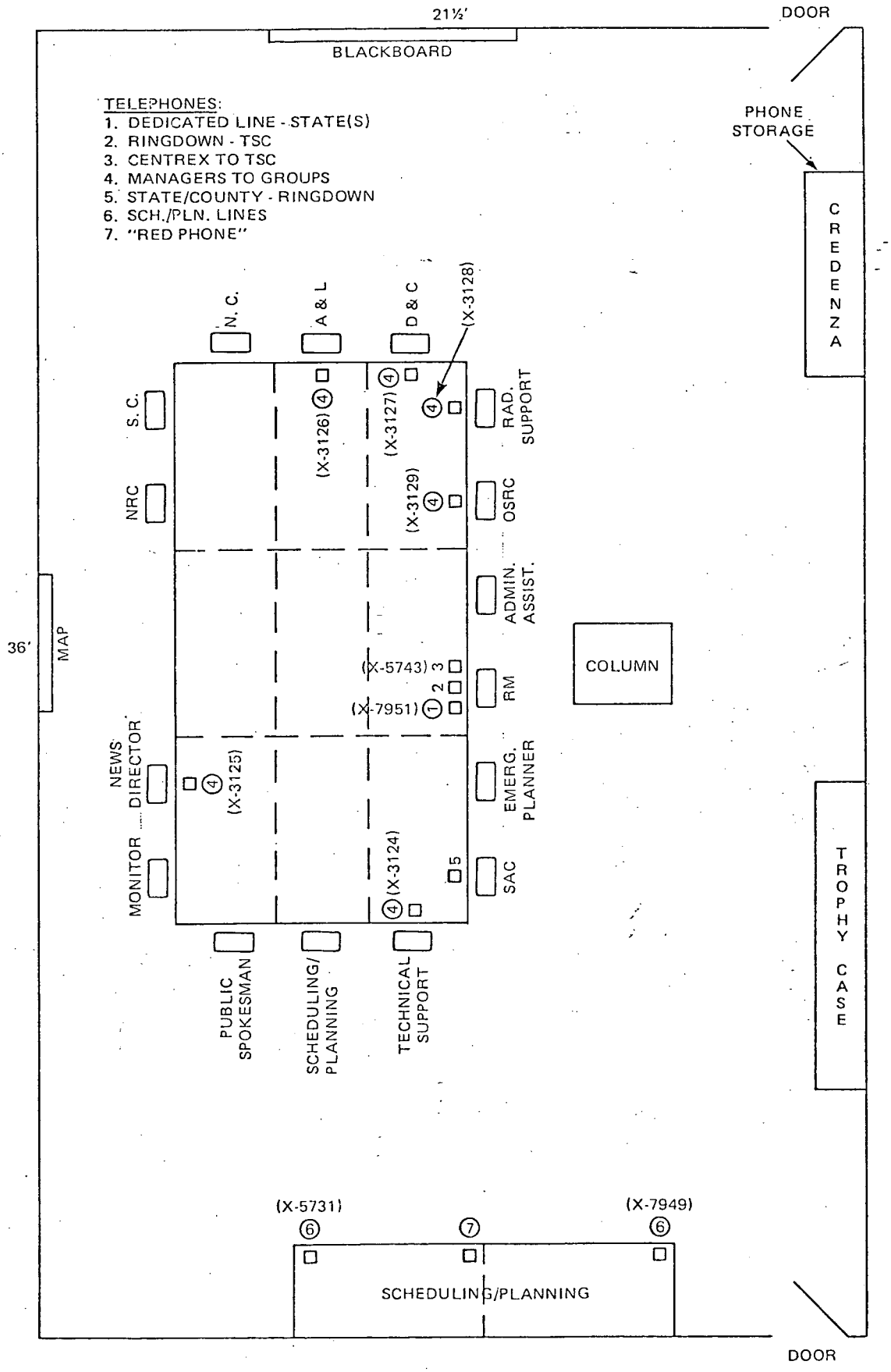
OTHER CMC FACILITIES:

1. CRISIS NEWS - 5TH FLOOR POWER BUILDING
2. DESIGN & CONSTRUCTION - ELECTRIC CENTER 3RD FLOOR

NOTE:
* - DUKE POWER CO. FLOOR
** - PARTIAL DUKE POWER CO. FLOOR

DUKE POWER COMPANY
GENERAL OFFICE RESPONSE FACILITIES

RECOVERY MANAGER/SCHEDULING & PLANNING OFFICE
WACHOVIA CENTER – ROOM 1010
FIGURE 4



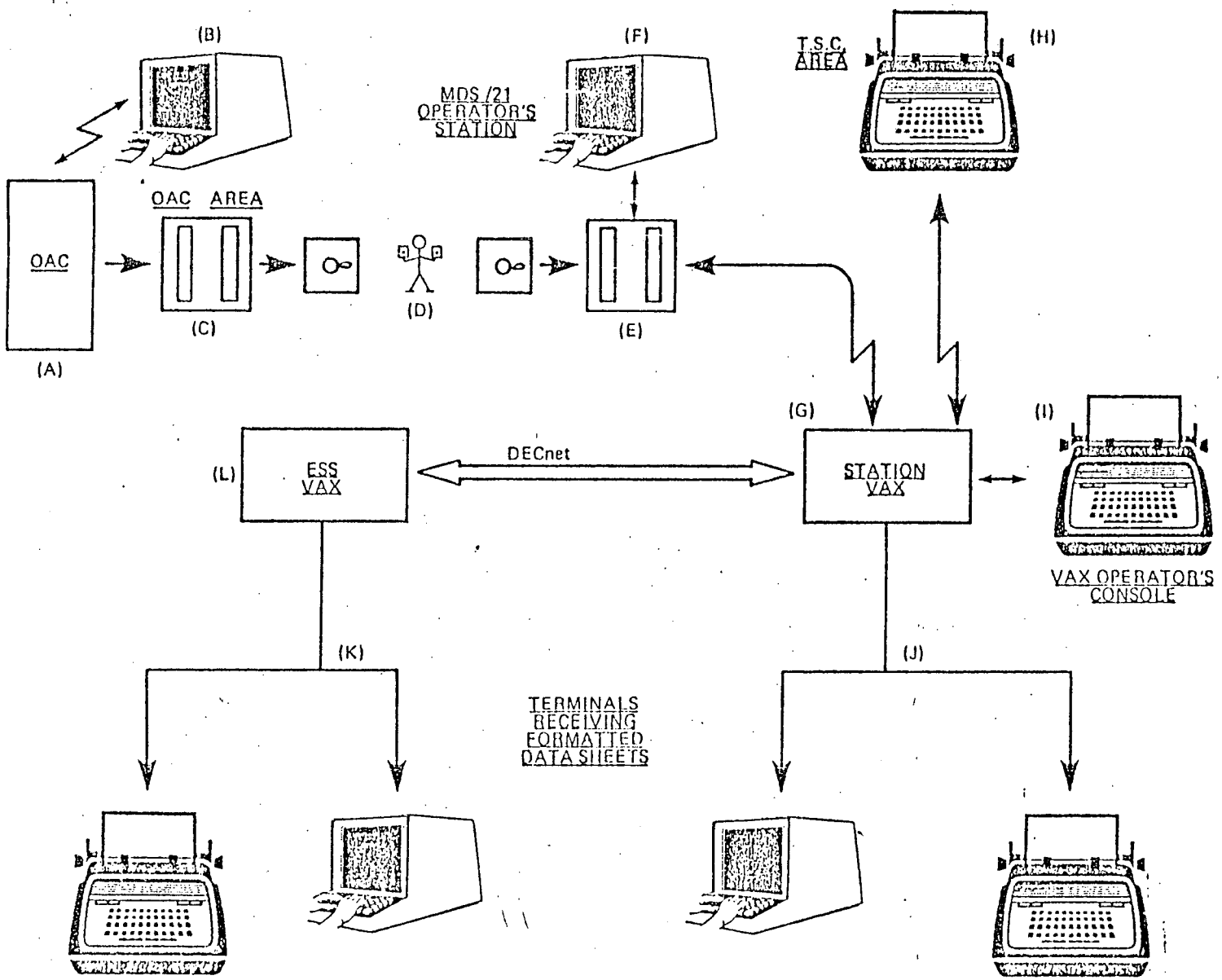


Figure 5 Crisis Management Data Transmittal System for Oconee Nuclear Station

Figure 6

UNIT:_____
PLANT STATUS:

OCONEE NUCLEAR STATION
PLANT DATA AND STATUS
INFORMATION

Page_____
Date_____
Time_____

A. PRIMARY COOLANT SYSTEM

1. (Point ID) T/Hot - Loop A_____ °F
2. (Point ID) T/Hot - Loop B_____ °F
3. (Point ID) T/Cold - Loop A1_____ °F
4. (Point ID) T/Cold - Loop A2_____ °F
5. (Point ID) T/Cold - Loop B1_____ °F
6. (Point ID) T/Cold - Loop B2_____ °F
7. (Point ID) RC System Press._____ PSIG
8. (Point ID) Pzr. Water Level_____ In.H2O
9. (Point ID) Latest Boron Conc._____ PPM
10. (Point ID) Neutron Flux (SR)_____ CPS
11. (Point ID) Neutron Flux (IR)_____ E-6 Amps
12. (Point ID) Neutron Flux (PR)_____ %FP
13. (Point ID) RCP/A1 Status:_____
14. (Point ID) RCP/A2 Status:_____
15. (Point ID) RCP/B1 Status:_____
16. (Point ID) RCP/B2 Status:_____

B. SECONDARY COOLANT SYSTEM

1. (Point ID) SG/A Level_____ In.H2O
2. (Point ID) SG/B Level_____ In.H2O
3. (Point ID) SG/A Press._____ PSIG
4. (Point ID) SG/B Press._____ PSIG
5. (Point ID) Main FW Flow_____ KLB/HR
6. (Point ID) SG/A Emer FW Flow_____ GPM
7. (Point ID) SG/B Emer FW Flow_____ GPM
8. (Point ID) Upper Surge T Lev_____ FT.H_2O

C. AUXILIARY SYSTEMS

1. (Point ID) HPI Letdown Flow_____ GPM
2. (Point ID) HPI Makeup Flow_____ #/HR

D. SAFETY INJECTION

1. (Point ID) HPI Loop A Flow_____ GPM
2. (Point ID) HPI Loop B Flow_____ GPM
3. (Point ID) LPI Loop A Flow_____ GPM
4. (Point ID) LPI Loop B Flow_____ GPM
5. (Point ID) LPI Pump A Status:_____

D. continued . . .

6. (Point ID) LPI Pump B Status:_____
7. (Point ID) LPI Pump C Status:_____
8. (Point ID) HPI Pump A Status:_____
9. (Point ID) HPI Pump B Status:_____
10. (Point ID) HPI Pump C Status:_____

E. CONTAINMENT SYSTEMS

1. (Point ID) Containment Press._____ PSIG
2. (Point ID) Containment Temp._____ °F
3. (Point ID) Containment Emer Sump Level_____ FT
4. (Point ID) Containment H_2 Concen._____ %
5. (Point ID) RB Normal Sump Level_____ In.H_2O

F. RADIATION MONITORING SYSTEM

1. (Point ID) SG/A RIA 16-Gross Activity_____ MR/HR
2. (Point ID) SG/B RIA 17-Gross Activity_____ MR/HR
3. (Point ID) RIA-40 CSAE Monitor_____ CPM
4. (Point ID) RIA-44 Vent Iodine_____ CPM
5. (Point ID) RIA-45 LR Vent Noble Gas_____ CPM
6. (Point ID) RIA-46 HR Vent Noble Gas_____ CPM
7. (Point ID) RIA-56 Vent Noble Gas_____ MR/HR
8. (Point ID) RIA-4 Cont HR Area_____ MR/HR
9. (Point ID) RIA-57 Cont HR_____ R/HR
10. (Point ID) RIA-58 Cont HR_____ R/HR

G. ENVIRONMENTAL SYSTEMS

1. (Point ID) Upper Wind Speed_____ MPH
2. (Point ID) Lower Wind Speed_____ MPH
3. (Point ID) Upper Wind Direction from_____ DEG
4. (Point ID) Lower Wind Direction from_____ DEG
5. (Point ID) Delta Temp_____ °F
6. (Point ID) Dew Point_____ °F
7. (Point ID) Ambient Temp._____ °F
8. (Point ID) Precipitation_____ IN

Figure 7

UNIT:
PLANT STATUS:

OCONEE NUCLEAR STATION
PLANT DATA AND STATUS
INFORMATION

Page
Date
Time

H. ADDITIONAL INFORMATION

1.

Point ID	42 Char. Description	Digital Status (If Any)	Value	Units
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

Figure 8

AVAILABLE OAC POINT ID's - OCONEE

Oconee Unit 1

NOTE: Other points are available on request to the CMC Data Coordinator.

	Point I.D.	Description	Units	Range
A				
1.	A1632	RC Hot Leg A WR Temp.	°F	50-650
	A1634	RC Hot Leg A Temp. 1	°F	520-620
	A1635	RC Hot Leg A Temp. 2	°F	520-620
2.	A1633	RC Hot Leg B WR Temp.	°F	50-650
	A1492	RC Hot Leg B Temp. 1	°F	520-620
	A1493	RC Hot Leg B Temp. 2	°F	520-620
3.	A1638	RC Cold Leg A1 NR Temp.	°F	520-620
	A1639	RC Cold Leg A1 WR Temp.	°F	50-650
4.	A1636	RC Cold Leg A2 NR Temp.	°F	520-620
	A1637	RC Cold Leg A2 WR Temp.	°F	50-650
5.	A1046	RC Cold Leg B1 NR Temp.	°F	520-620
	A1047	RC Cold Leg B1 WR Temp.	°F	50-650
6.	A1494	RC Cold Leg B2 NR Temp.	°F	520-620
	A1495	RC Cold Leg B2 WR Temp.	°F	50-650
7.	A1416	RC Loop A WR Press. 1	PSIG	0-2500
	A1418	RC Loop A WR Press. 2	PSIG	0-2500
	A1417	RC Loop B WR Press.	PSIG	0-2500
8.	A1939	RC PRZR LVL 1 Corr.	In. H_2O	
	A1940	RC PRZR LVL 2 Corr.	In. H_2O	
	A1941	RC PRZR LVL 3 Corr.	In. H_2O	
	A1717	RC PRZR LVL 1 Uncorrected	In. H_2O	0-400
	A1718	RC PRZR LVL 2 Uncorrected	In. H_2O	0-400
	A1719	RC PRZR LVL 3 Uncorrected	In. H_2O	0-400
9.	A1920	CA Boron Conc. PPM	PPM	
10.	A1536	NI 1 SR Flux	CPS	0.1-E6
	A1537	NI 2 SR Flux	CPS	0.1-E6
11.	A1540	NI 3 IR Flux	E^{-6}Amps	E^{-11}-E^{-3}
	A1541	NI 4 IR Flux	E^{-6}Amps	E^{-11}-E^{-3}
12.	A1544	NI 5 PR Flux	%	0-125
	A1545	NI 6 PR Flux	%	0-125
	A1546	NI 7 PR Flux	%	0-125
	A1547	NI 8 PR Flux	%	0-125
13.	D2306	RC Pump A1 ON (OFF)		
14.	D2307	RC Pump A2 ON (OFF)		
15.	D2308	RC Pump B1 ON (OFF)		
16.	D2309	RC Pump B2 ON (OFF)		
B				
1.	A1026	FDW SG A Full LVL	In. H_2O	0-650
	A1213	FDW SG A TR A LVL	In. H_2O	0-388
	A1214	FDW SG A TR B LVL	In. H_2O	0-388
2.	A1031	FDW SG B Full LVL	In. H_2O	0-650

Underline indicates points used on data sheet.

AVAILABLE OAC POINT ID's - OCONEE

Oconee Unit 1

	Point I.D.	Description	Units	Range
B (cont'd)				
	A1215	FDW SG B TR A LVL	In. H_2O	0-388
	A1216	FDW SG B TR B LVL	In. H_2O	0-388
3.	A1470	MS Stm. Gen. A Press. 1	PSIG	0-1200
	A1471	MS Stm. Gen. A. Press 2	PSIG	0-1200
4.	A1466	MS Stm. Gen. B. Press. 1	PSIG	0-1200
	A1467	MS Stm. Gen. B. Press. 2	PSIG	0-1200
5.	A1563	FDW Flow A Comp. & Sel.	LBS/Hr.	0-6E6
	A1564	FDW Flow B Comp. & Sel.	LBS/Hr.	0-6E6
6.	A1644	EMR FDW Flow 1 SG A	GPM	0-1200
7.	A1758	EMR FDW Flow 1 SG B	GPM	0-1200
8.	A0158	C UST A LVL	FT-H_2O	0-12
	A0014	C UST B LVL	FT-H_2O	0-12
C				
1.	A1044	HP Letdn. Flow	GPM	0-160
2.	A0944	DW UST MKUP Flow	LBS/HR	0-225000
D				
1.	A1238	HP Loop A Inj. Flow	GPM	0-6000
2.	A1239	HP Loop B Inj. Flow	GPM	0-6000
3.	A1310	LP Loop A Inj. Flow	GPM	0-1200
4.	A1311	LP Loop B Inj. Flow	GPM	0-1200
5.	A2214	LP Pump A ON (OFF)		
6.	A2215	LP Pump B ON (OFF)		
7.	A2216	LP Pump C ON (OFF)		
8.	D2125	HP Pump A ON (OFF)		
9.	D2127	HP Pump B ON (OFF)		
10.	D2129	HP Pump C ON (OFF)		
E				
1.	A1011	Reactor Bldg. Press. CH. A	PSIG	-5-175
	A1315	Reactor Bldg. Press. CH. B	PSIG	-5-175
2.	A0043	RBV Dome Temp.	°F	0-390
	A0005	RBV RB LWR Temp.	°F	0-390
3.	A1565	RB Sump Level CH. A	Ft.	0-15
	A1033	RB Sump LVL CH. B	Ft.	0-15
4.	A1465	CA H2 Conc.	%	0-5
5.	A0049	LWD RB NOR Sump LVL	In. H_2O	0-30

Underline indicates points used on data sheet.

AVAILABLE OAC POINT ID's - OCONEE

Oconee Unit 1

	Point I.D.	Description	Units	Range
F				
1.	A1670	RM 36 RC Letdn.	CNT/MIN	10-106
2.	A1663	RM 16 MS HDR A	MR/HR	.01-E7
3.	A1676	RM 17 MS HDR B	MR/HR	.01-E7
4.	A1674	RM 40 CSAE EXH	CNT/MIN	10-106
5.	A1264	RM HR CONT AREA MON TR A	R/HR	1-1E8
	A1265	RM HR CONT AREA MON TR B	R/HR	1-1E8
6.	A1680	RM 46 Unit Vent Gas HR	CNT/MIN	10-106
G				
1.	A0012	MC Wind Speed	MPH	0-30
2.			(Not Available)	
3.	A0013	MC Wind Direction	Deg L	0-+/-180
4.			(Not Available)	
5.	A0953	MC Delta CS Air Temp. Top	°F	-30-(+30)
6.			(Not Available)	
7.			(Not Available)	
8.			(Not Available)	

Underline indicates points used on data sheet.

AVAILABLE OAC POINT ID's - OCONEE

Oconee Unit 2

	Point I.D.	Description	Units	Range
A				
1.	A1632	RC Hot Leg A WR Temp.	°F	50-650
	A1634	RC Hot Leg A Temp. 1	°F	520-620
	A1635	RC Hot Leg A Temp. 2	°F	520-620
2.	A1633	RC Hot Leg B WR Temp.	°F	50-650
	A1492	RC Hot Leg B Temp. 1	°F	520-620
	A1493	RC Hot Leg B Temp. 2	°F	520-620
3.	A1638	RC Cold Leg A1 NR Temp.	°F	520-620
	A1639	Cold Leg A1 WR Temp.	°F	60-650
4.	A1636	RC Cold Leg A2 NR Temp.	°F	520-620
	A1637	RC Cold Leg A2 WR Temp.	°F	60-650
5.	A1046	RC Cold B1 NR Temp.	°F	520-620
	A1047	RC Cold Leg B1 WR Temp.	°F	50-650
6.	A1494	RC Cold Leg B2 NR Temp.	°F	520-620
	A1495	RC Cold Leg B2 WR Temp.	°F	50-650
7.	A1416	RC Loop A WR Press. 1	PSIG	0-2500
	A1418	RC Loop A WR Press. 2	PSIG	0-2500
	A1417	RC Loop B WR Press.	PSIG	0-2500
8.	A1939	RC PRZR LVL 1 Corr.	In. H_2O	
	A1940	RC PRZR LVL 2 Corr.	In. H_2O	
	A1941	RC PRZR LVL 3 Corr.	In. H_2O	
	A1717	RC PRZR LVL 1 Uncorrected	In. H_2O	0-400
	A1718	RC PRZR LVL 2 Uncorrected	In. H_2O	0-400
	A1719	RC PRZR LVL 3 Uncorrected	In. H_2O	0-400
9.	A1009	CA Boron Conc. PPM	PPM	0-2050
10.	A1536	NI 1 SR Flux	CPS	0.1-E6
	A1537	NI 2 SR Flux	CPS	0.1-E6
11.	A1540	NI 3 IR FLux	E^{-6}Amps	E^{-11}-E^{-3}
	A1541	NI 4 IR FLux	E^{-6}Amps	E^{-11}-E^{-3}
12.	A1544	NI 5 PR Flux	%	0-125
	A1545	NI 6 PR Flux	%	0-125
	A1546	NI 7 PR Flux	%	0-125
	A1547	NI 8 PR Flux	%	0-125
13.	D2306	RC Pump A1 ON (OFF)		
14.	D2307	RC Pump A2 ON (OFF)		
15.	D2308	RC Pump B1 ON (OFF)		
16.	D2309	RC Pump B2 ON (OFF)		
B				
1.	A1026	FDW SG A Full LVL	In. H_2O	0-648
	A1213	FDW SG A TR A LVL	In. H_2O	0-388
	A1214	FDW SG A TR A LVL	In. H_2O	0-388

Underline indicates points used on data sheet.

AVAILABLE OAC POINT ID's - OCONEE

Oconee Unit 2

	Point I.D.	Description	Units	Range
B (cont'd)				
2.	A1031	FDW SG B Full LVL	In. H_2O	0-648
	A1215	FDW SG B TR A LVL	In. H_2O	0-388
	A1216	FDW SG B TR B LVL	In. H_2O	0-388
3.	A1470	MS Stm. Gen. A Press. 1	PSIG	0-1200
	A1471	MS Stm. Gen. A Press. 2	PSIG	0-1200
4.	A1466	MS Stm. Gen. B Press. 1	PSIG	0-1200
	A1467	MS Stm. Gen. B Press. 2	PSIG	0-1200
5.	A1563	FDW Flow B Comp. & Sel.	LBS/Hr.	0-6E6
	A1564	FDW Flow B Comp. & Sel.	LBS/Hr.	0-6E6
6.	A0012	EMR FDW Flow 1 SG A	GPM	0-1200
7.	A0013	EMR FDW Flow 1 SG B	GPM	0-1200
8.	A0014	C UST A LVL	FT-H_2O	0-12
	A0158	C UST B LVL	FT-H_2O	0-12
C				
1.	A1044	HP Letdn. Flow	GPM	0-160
2.	A0944	DW UST MKUP Flow	LBS/Hr.	0-225000
D				
1.	A1238	HP Loop A Inj. Flow	GPM	0-1200
2.	A1239	HP Loop B Inj. Flow	GPM	0-1200
3.	A1310	LP Loop A Inj. Flow	GPM	0-1300
4.	A1311	LP Loop B Inj. Flow	GPM	0-1300
5.	D2214	LP Pump A ON (OFF)		
6.	D2215	LP Pump B ON (OFF)		
7.	D2216	LP Pump C ON (OFF)		
8.	D2125	HP Pump A ON (OFF)		
9.	D2127	HP Pump B ON (OFF)		
10.	D2129	HP PUmp C ON (OFF)		
E				
1.	A1011	Reactor Bldg. Press. CH. A	PSIG	-5-175
	A1315	Reactor Bldg. Press. CH. B	PSIG	-5-175
2.	A0043	RBV Dome Temp.	°F	0-390
	A0005	RBV RB LWR Temp.	°F	0-390
3.	A0792	RB Sump Level Ch. A	Ft.	0-15
	A0793	RB Sump LVL CH. B	Ft.	0-15
4.		CA H2 Conc.	(Not Available)	
5.	A0049	LWD RB NOR Sump LVL	In. H_2O	0-30

Underline indicates points used on data sheet.

AVAILABLE OAC POINT ID's - OCONEE

Oconee Unit 2

	Point I.D.	Description	Units	Range
F				
1.	A1670	RM 36 RC Letdn.	CNT/MIN	10-106
2.	A1663	RM 16 MS HDR A	MR/HR	.01-E7
3.	A1676	RM 17 MS HDR B	MR/HR	.01-E7
4.	A1674	RM 40 CSAE EXH	CNT/MIN	10-106
5.	A1264	RM HR CONT AREA MON TR A	R/HR	1-1E8
	A1265	RM HR CONT AREA MON TR B	R/HR	1-1E8
6.	A1680	RM 46 Unit Vent Gas HR	CNT/MIN	10-106
G				
1.		MC Wind Speed		
2.			(Not Available)	
3.		MC Wind Direction		
4.			(Not Available)	
5.	A0953	MC Delta OS Air Temp. Top	°F	-30-(+30)
6.			(Not Available)	
7.			(Not Available)	
8.			(Not Available)	
9.			(Not Available)	

Underline indicates points used on data sheet.

AVAILABLE OAC POINT ID's - OCONEE

Oconee Unit 3

	Point I.D.	Description	Units	Range
A				
1.	A1632	RC Hot Leg A WR Temp.	°F	50-650
	A1634	RC Hot Leg A Temp. 1	°F	520-620
	A1635	RC Hot Leg A Temp. 2	°F	520-620
2.	A1633	RC Hot Leg B WR Temp.	°F	50-650
	A1492	RC Hot Leg B Temp. 1	°F	520-620
	A1493	RC Hot Leg B Temp. 2	°F	520-620
3.	A1638	RC Cold Leg A1 NR Temp.	°F	520-620
	A1639	RC Cold Leg A1 WR Temp.	°F	50-650
4.	A1636	RC Cold Leg A2 NR Temp.	°F	520-620
	A1637	RC Cold Leg A2 WR Temp.	°F	50-650
5.	A1046	RC Cold Leg B1 NR Temp.	°F	520-620
	A1047	RC Cold Leg B1 WR Temp.	°F	50-650
6.	A1494	RC Cold Leg B2 NR Temp.	°F	520-620
	A1495	RC Cold Leg B2 WR Temp.	°F	50-650
7.	A1416	RC Loop A WR Press. 1	PSIG	0-2500
	A1418	RC Loop A WR Press. 2	PSIG	0-2500
	A1417	RC Loop B WR Press.	PSIG	0-2500
8.	A1939	RC PRZR LVL 1 Corr.	In. H_2O	
	A1940	RC PRZR LVL 2 Corr.	In. H_2O	
	A1941	RC PRZR LVL 3 Corr.	In. H_2O	
	A1717	RC PRZR LVL 1 Uncorrected	In. H_2O	0-400
	A1718	RC PRZR LVL 2 Uncorrected	In. H_2O	0-400
	A1719	RC PRZR LVL 3 Uncorrected	In. H_2O	0-400
9.	A1009	CA Boron Conc. PPM	PPM	0-2050
10.	A1536	NI 1 SR Flux	CPS	0.1-E6
	A1537	NI 2 SR Flux	CPS	0.1-E6
11.	A1540	NI 3 IR Flux	E^{-6}Amps	E^{-11}-E^{-3}
	A1541	NI 4 IR Flux	E^{-6}Amps	E^{-11}-E^{-3}
12.	A1544	NI 5 PR Flux	%	0-125
	A1545	NI 6 PR Flux	%	0-125
	A1546	NI 7 PR Flux	%	0-125
	A1547	NI 8 PR Flux	%	0-125
13.	D2306	RC Pump A1 ON (OFF)		
14.	D2307	RC Pump A2 ON (OFF)		
15.	D2308	RC Pump B1 ON (OFF)		
16.	D2309	RC Pump B2 ON (OFF)		
B				
1.	A1026	FDW SG A Full LVL	In. H_2O	0-650
	A1213	FDW SG A TR A LVL	In. H_2O	0-388
	A1214	FDW SG A TR A LVL	In. H_2O	0-388

Underline indicates points used on data sheet.

AVAILABLE OAC POINT ID's - OCONEE

Oconee Unit 3

	Point I.D.	Description	Units	Range
B (cont'd)				
2.	A1031	FDW SG B Full LVL	In. H_2O	0-650
	A1215	FDW SG B TR A LVL	In. H_2O	0-388
	A1216	FDW SG B TR B LVL	In. H_2O	0-388
3.	A1470	MS Stm. Gen. A Press. 1	PSIG	0-1200
	A1471	MS Stm. Gen. A Press. 2	PSIG	0-1200
4.	A1466	MS Stm. Gen. B Press. 1	PSIG	0-1200
	A1467	MS Stm. Gen. B Press. 2	PSIG	0-1200
5.	A1563	FDW Flow A Comp. & Sel.	LBS/Hr.	0-6E6
	A1564	FDW Flow B Comp. & Sel.	LBS/Hr.	0-6E6
6.	A0012	EMR FDW Flow 1 SG A	GPM	0-1200
7.	A0013	EMR FDW Flow 1 SG B	GPM	0-1200
8.	A0158	C UST A LVL	FT-H_2O	0-12
	A0014	C UST B LVL	FT-H_2O	0-12
C				
1.	A1044	HP Letdn. Flow	GPM	0-160
2.	A0944	DW UST MKUP Flow	LBS/HR	0-225000
D				
1.	A1238	HP Loop A Inj. Flow	GPM	0-1200
2.	A1239	HP Loop B Inj. Flow	GPM	0-1200
3.	A1310	LP Loop A Inj. Flow	GPM	0-1300
4.	A1311	LP Loop B Inj. Flow	GPM	0-1300
5.	D2214	LP Pump A ON (OFF)		
6.	D2215	LP Pump B ON (OFF)		
7.	D2216	LP Pump C ON (OFF)		
8.	D2125	HP Pump A ON (OFF)		
9.	D2127	HP Pump B ON (OFF)		
10.	D2129	HP Pump C ON (OFF)		
E				
1.	A1011	Reactor Bldg. Press. CH. A	PSIG	-5-175
	A1315	Reactor Bldg. Press. CH. B	PSIG	-5-175
2.	A0043	RBV Dome Temp.	°F	0-390
	A0005	RBV RB LWR Temp.	°F	0-390
3.	A0792	RB Sump Level CH. A	Ft.	0-15
	A0793	RB Sump LVL CH. B	Ft.	0-15
4.	A1465	CA A2 Conc.	%	0-5
5.	A0049	LWD RB NOR Sump LVL	In. H_2O	0-30

Underline indicates points used on data sheet.

AVAILABLE OAC POINT ID's - OCONEE

Oconee Unit 3

	Point I.D.	Description	Units	Range
F				
1.	A1670	RM 36 RC Letdn.	CNT/MIN	10-106
2.	A1663	RM 16 MS HDR A	MR/HR	.01-E7
3.	A1676	RM 17 MS HDR B	MR/HR	.01-E7
4.	A1674	RM 40 CSAE EXH	CNT/MIN	10-106
5.	A1264	RM HR CONT AREA MON TR A	R/HR	1-1E8
	A1265	RM HR CONT AREA MON TR B	R/HR	1-1E8
6.	A1680	RM 46 Unit Vent Gas HR	CNT/MIN	10-106
G				
1.		MC Wind Speed	(Not Available)	
2.			(Not Available)	
3.		MC Wind Direction	(Not Available)	
4.			(Not Available)	
5.		MC Delta OS Air Temp Top	(Not Available)	
6.			(Not Available)	
7.			(Not Available)	
8.			(Not Available)	
9.			(Not Available)	

Underline indicates points used on data sheet.

FIGURE 9

SELECTIVE SIGNALING SYSTEM LAYOUT – OCONEE