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DUKE POWER COMPANY P.O. BOX 33189 CHARLOTTE, N.C. 28242

HAL B. TUCKER vice president nuclear production

June 3, 1983

TELEPHONE (704) 373-4531

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.

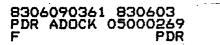
The known Staff concerns related to locating the EOF are addressed in the attached. Following NRC review of this submittal, Duke would welcome the opportunity to further discuss this justification with the Staff and the Commission.

Very truly yours,

Hal B. Tucker

Hal B. Tucker

RLG/php Attachment





Mr. Harold R. Denton, Director June 3, 1983 Page 2

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 (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.

-2-

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.

-4-

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 hampen: 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 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
- 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.

-7-

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)
- 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.

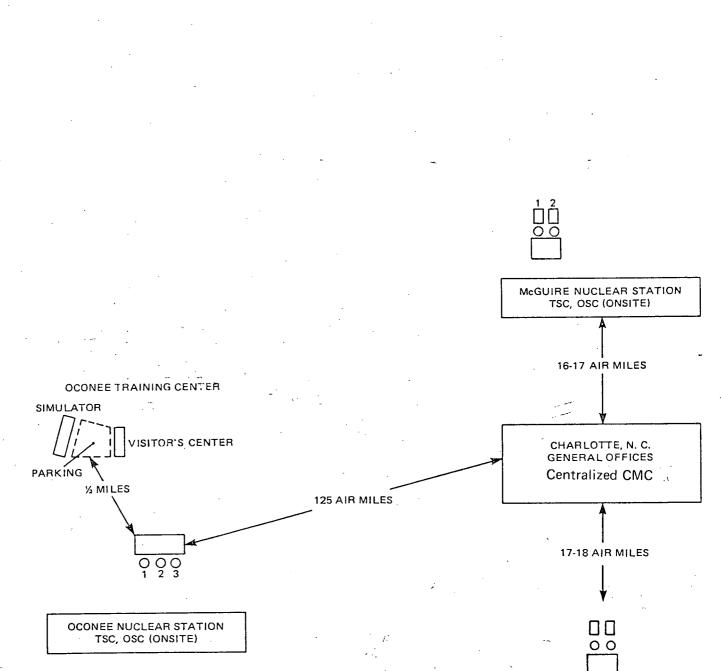
V. Conclusion

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



CATAWBA NUCLEAR STATION

TSC, OSC (ONSITE)

DUKE POWER COMPANY GENERAL OFFICE RESPONSE FACILITIES

FIGURE 2

Oconee/McGUIRE/CATAWBA CMC

3

GENERAL OFFICE BUILDING LAYOUT - CHARLOTTE, N. C.

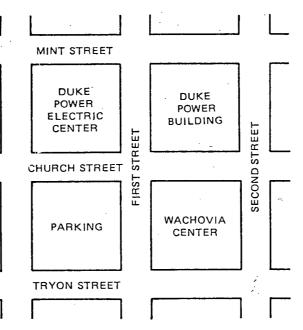
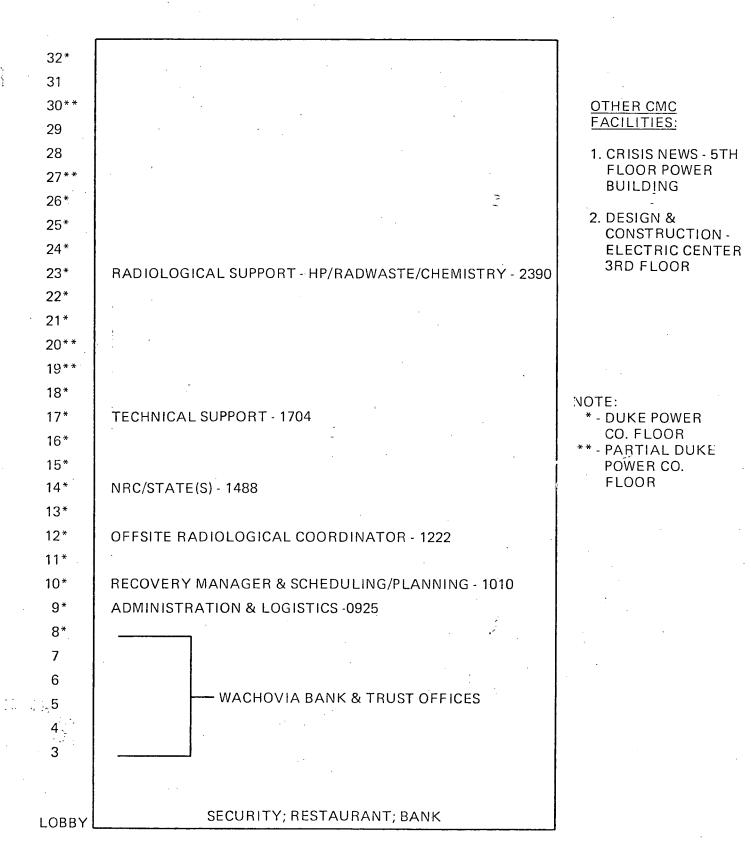
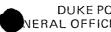


FIGURE 3 - WACHOVIA CENTER LAYOUT - CMC GROUP LOCATIONS

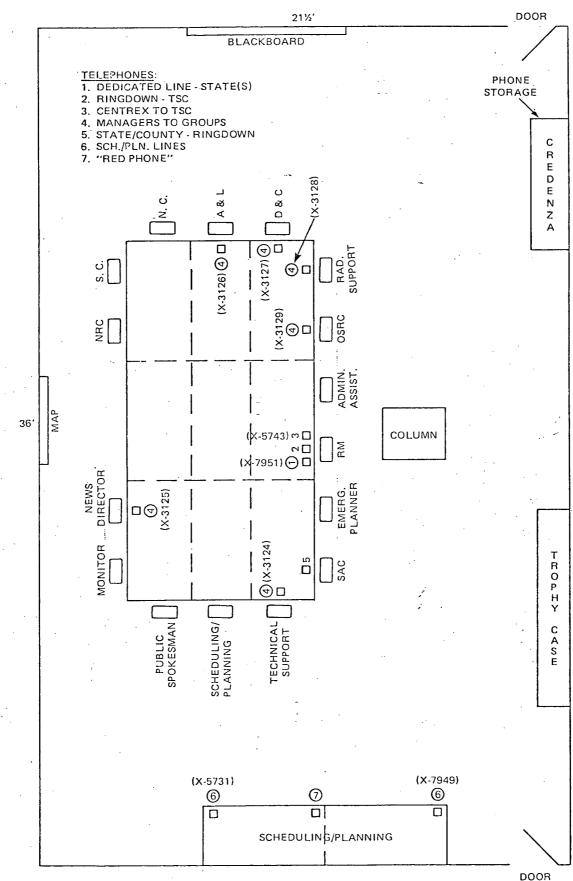


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DUKE POWER COMPANY VERAL OFFICE RESPONSE FACILITIES

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



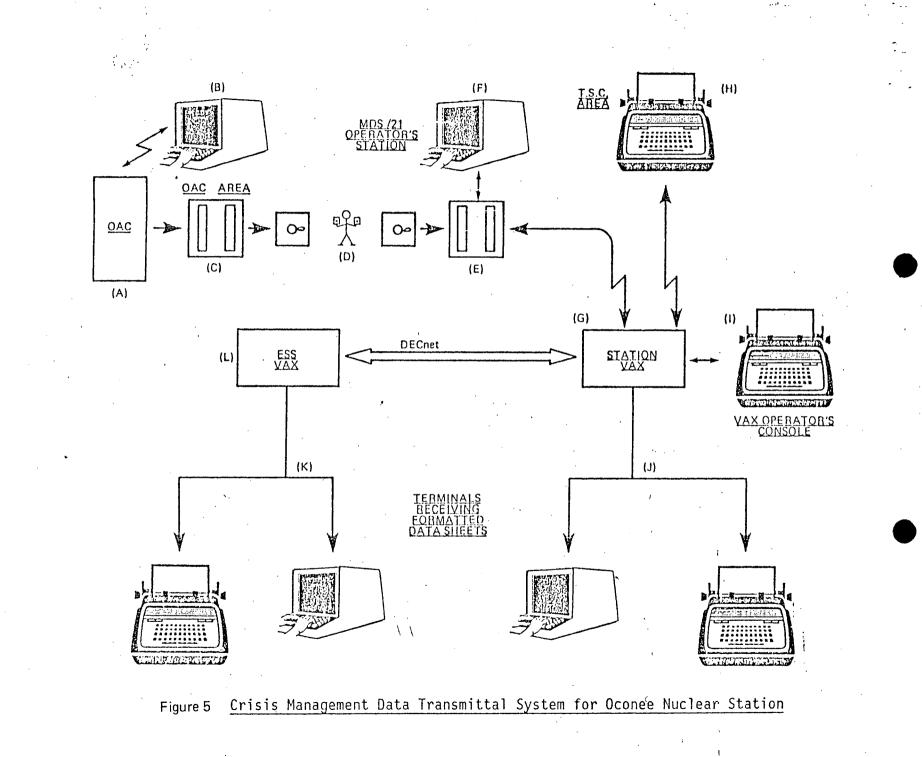


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Figure 8 AVAILABLE OAC POINT ID's - OCONEE

Oconee Unit 1

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

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	Point I.D.	Description	<u>Units</u>	Range
<u>A</u> 1. 2. 3. 4. 5. 6. 7. 8. 9. 10.	A1632 A1634 A1635 A1633 A1492 A1493 A1638 A1639 A1636 A1637 A1046 A1047 A1046 A1047 A1494 A1495 A1416 A1418 A1417 A14939 A1940 A1941 A1717 A1718 A1719 A1920 A1536 A1537	RC Hot Leg A WR Temp. RC Hot Leg A Temp. 1 RC Hot Leg A Temp. 2 RC Hot Leg B WR Temp. RC Hot Leg B Temp. 1 RC Hot Leg B Temp. 2 RC Cold Leg A1 NR Temp. RC Cold Leg A1 WR Temp. RC Cold Leg A2 NR Temp. RC Cold Leg B1 NR Temp. RC Cold Leg B1 NR Temp. RC Cold Leg B1 WR Temp. RC Cold Leg B2 WR Temp. RC Loop A WR Press. 1 RC Loop A WR Press. 2 RC Loop B WR Press. RC PRZR LVL 1 Corr. RC PRZR LVL 2 Corr. RC PRZR LVL 3 Corr. RC PRZR LVL 3 Uncorrected RC PRZR LVL 3 R Flux	°F °F °F °F °F °F °F °F °F °F °F °F °F °	50-650 520-620 520-620 520-620 520-620 520-620 50-650 520-620 50-650 520-620 50-650 520-620 50-650 0-2500 0-2500 0-2500 0-2500 0-2500 0-400 0-400 0-400 0.1-E6 0.1-E6
11. 12. 13. 14. 15. 16. <u>B</u>	A1540 A1541 A1544 A1545 A1546 A1547 D2306 D2307 D2308 D2309	NI 2 SK FTUX NI 3 IR Flux NI 4 IR Flux NI 5 PR Flux NI 6 PR Flux NI 7 PR Flux NI 8 PR Flux RC Pump A1 ON (OFF) RC Pump B1 ON (OFF) RC Pump B2 ON (OFF)	E ⁻⁶ Amps E ⁻⁶ Amps % % %	E ¹¹ -E ³ E ¹¹ -E ³ O-125 O-125 O-125 O-125
<u>-</u> 1. 2.	A1026 A1213 A1214 A1031	FDW SG A Full LVL FDW SG A TR A LVL FDW SG A TR B LVL FDW SG B Full LVL	In. H ₂ 0 In. H ₂ 0 In. H ₂ 0 In. H ₂ 0	0-650 0-388 0-388 0-650

Oconee Unit 1

	Point I.D. cont'd)	Description	<u>Units</u>	Range
3. 4. 5. 6. 7. 8.	A1215 A1216 A1470 A1471 A1466 A1467 A1563 A1564 A1644 A1644 A1758 A0158 A0014	FDW SG B TR A LVL FDW SG B TR B LVL MS Stm. Gen. A Press. 1 MS Stm. Gen. A. Press 2 MS Stm. Gen. B. Press. 1 MS Stm. Gen. B. Press. 2 FDW Flow A Comp. & Sel. FDW Flow B Comp. & Sel. EMR FDW Flow 1 SG A EMR FDW Flow 1 SG B C UST A LVL C UST B LVL	In. H_20 In. H_20 PSIG PSIG PSIG LBS/Hr. LBS/Hr. GPM FT-H_20 FT-H_20	0-388 0-388 0-1200 0-1200 0-1200 0-1200 0-1200 0-6E6 0-6E6 0-1200 0-12 0-12
· <u>C</u>				
1. 2.	A1044 A0944	HP Letdn. Flow DW UST MKUP Flow	GPM LBS/HR	0-160 0-225000
<u>D</u>	·			· ·
1. 2. 3. 4. 5. 6. 7. 8. 9. 10.	A1238 A1239 A1310 A1311 A2214 A2215 A2216 D2125 D2127 D2129	HP Loop A Inj. Flow HP Loop B Inj. Flow LP Loop A Inj. Flow LP Loop B Inj. Flow LP Pump A ON (OFF) LP Pump B ON (OFF) HP Pump C ON (OFF) HP Pump B ON (OFF) HP Pump B ON (OFF) HP Pump C ON (OFF)	GPM GPM GPM	0-6000 0-6000 0-1200 0-1200
<u>E</u>				
1. 2. 3. 4. 5.	A1011 A1315 A0043 A0005 A1565 A1033 A1465 A0049	Reactor Bldg. Press. CH. A Reactor Bldg. Press. CH. B RBV Dome Temp. RBV RB LWR Temp. RB Sump Level CH. A RB Sump LVL CH. B CA H2 Conc. LWD RB NOR Sump LVL	PSIG PSIG °F Ft. Ft. Ft. % In. H ₂ 0	-5-175 -5-175 0-390 0-390 0-15 0-15 0-5 0-30

Oconee Unit 1

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

<u>Oconee Unit 2</u>

. ·	Point I.D.	Description		<u>Units</u>	Range
<u>A</u>					
1.	A1632 A1634 A1635	RC Hot Leg A WR Temp. RC Hot Leg A Temp. 1 RC Hot Leg A Temp. 2	•	°F ~ °F °F	50-650 520-620 520-620
2.	A1633 A1633 A1492 A1493	RC Hot Leg B WR Temp. 2 RC Hot Leg B WR Temp. RC Hot Leg B Temp. 1 RC Hot Leg B Temp. 2	-	°F °F °F	50-650 520-620 520-620
3.	A1638 A1639	RC Cold Leg Al NR Temp. Cold Leg Al WR Temp.		°F °F	520-620 520-620 60-650
4.	A1636 A1637	RC Cold Leg A2 NR Temp. RC Cold Leg A2 WR Temp.		°F °F	520-620 60-650
5.	A1046 A1047	RC Cold B1 NR Temp. RC Cold Leg B1 WR Temp.		°F °F °F	520-620 50-650 520-620
6. 7.		RC Cold Leg B2 NR Temp. RC Cold Leg B2 WR Temp. RC Loop A WR Press. 1	• •	°F PSIG	50-650 0-2500
8.	A1418 A1417 A1939	RC Loop A WR Press. 2 RC Loop B WR Press. RC PRZR LVL 1 Corr.		PSIG PSIG In. H ₂ 0	0-2500 0-2500
	A1940 A1941 A1717 A1718 A1719	RC PRZR LVL 2 Corr. RC PRZR LVL 3 Corr. RC PRZR LVL 1 Uncorrected RC PRZR LVL 2 Uncorrected RC PRZR LVL 3 Uncorrected		In. H_2^-0 In. H_2^-0 In. H_2^-0 In. H_2^-0 In. H_2^-0	0-400 0-400 0-400
9. 10.	A1009 A1536 A1537	CA Boron Conc. PPM NI 1 SR Flux NI 2 SR Flux		PPM CPS CPS	0-2050 0.1-E6 0.1-E6
11.	<u>A1540</u> A1541	NI 3 IR FLux NI 4 IR FLux		E ⁻⁶ Amps E ⁻⁶ Amps	E ¹¹ -E ³ E ¹¹ -E ³
12.	A1544 A1545 A1546 A1547	NI 5 PR Flux NI 6 PR Flux NI 7 PR Flux NI 8 PR Flux		% % %	0-125 0-125 0-125 0-125
13. 14. 15. 16.	A1547 D2306 D2307 D2308 D2309	RC Pump A1 ON (OFF) RC Pump A2 ON (OFF) RC Pump B1 ON (OFF) RC Pump B2 ON (OFF)		/0	0-125
<u>B</u>					
1.	<u>A1026</u> A1213 A1214	FDW SG A Full LVL FDW SG A TR A LVL FDW SG A TR A LVL		In. H ₂ 0 In. H ₂ 0 In. H ₂ 0	0-648 0-388 0-388

Oconee Unit 2

•	P	oint I.D.	Description	<u>Units</u>	Range
	<u>B (c</u>	ont'd)			
	2. 3. 4. 5. 6. 7. 8.	A1031 A1215 A1216 A1470 A1471 A1466 A1467 A1563 A1564 A0012 A0013 A0014 A0158	FDW SG B Full LVL FDW SG B TR A LVL FDW SG B TR B LVL MS Stm. Gen. A Press. 1 MS Stm. Gen. A Press. 2 MS Stm. Gen. B Press. 2 FDW Flow B Comp. & Sel. FDW Flow B Comp. & Sel. EMR FDW Flow 1 SG A EMR FDW Flow 1 SG B C UST A LVL C UST B LVL	In. H_20 In. H_20 In. H_20 PSIG PSIG PSIG LBS/Hr. LBS/Hr. GPM GPM FT-H ₂ 0 FT-H ₂ 0	0-648 0-388 0-388 0-1200 0-1200 0-1200 0-1200 0-6E6 0-6E6 0-1200 0-1200 0-12 0-12
	<u>C</u>	· .			
	1. 2.	<u>A1044</u> A0944	HP Letdn. Flow DW UST MKUP Flow	GPM LBS/Hr.	0-160 0-225000
	<u>D</u>		· · · · · · · · · · · · · · · · · · ·		
	1. 2. 3. 4. 5. 6. 7. 8. 9. 10.	A1238 A1239 A1310 A1311 D2214 D2215 D2216 D2125 D2125 D2127 D2129	HP Loop A Inj. Flow HP Loop B Inj. Flow LP Loop A Inj. Flow LP Loop B Inj. Flow LP Pump A ON (OFF) LP Pump B ON (OFF) HP Pump C ON (OFF) HP Pump B ON (OFF) HP Pump B ON (OFF) HP PUmp C ON (OFF)	GPM GPM GPM	0-1200 0-1200 0-1300 0-1300
	<u>E</u>		· · · · · · · · · · · · · · · · · · ·		
	1. 2. 3. 4. 5.	A1011 A1315 A0043 A0005 A0792 A0793 A0049	Reactor Bldg. Press. CH. A Reactor Bldg. Press. CH. B RBV Dome Temp. RBV RB LWR Temp. RB Sump Level Ch. A RB Sump LVL CH. B CA H2 Conc. LWD RB NOR Sump LVL	PSIG PSIG °F °F Ft. Ft. (Not Avai In. H ₂ 0	-5-175 -5-175 0-390 0-390 0-15 0-15 lable) 0-30

Oconee Unit 2

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

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<u>Oconee Unit 3</u>

F	Point I.D.	Description	Units	Range
A	• •			
1.	A1632 A5634	RC Hot Leg A WR Temp. RC Hot Leg A Temp. 1	۰۴ ۰۴ ۰	50-650 520-620
2.	A1635 A1633 A1492	RC Hot Leg A Temp. 2 RC Hot Leg B WR Temp. RC Hot Leg B Temp. 1	°F °F	520-620 50-650 520-620
3.	A1493 <u>A1638</u> A1639	RC Hot Leg B Temp. 2 RC Cold Leg Al NR Temp. RC Cold Leg Al WR Temp.	°F °F °F	520-620 520-620 50-650
4.	A1636 A1637	RC Cold Leg A2 NR Temp. RC Cold Leg A2 WR Temp.	°F °F °F	520-620 50-650
5. 6.	<u>A1046</u> A1047 A1494	RC Cold Leg B1 NR Temp. RC Cold Leg B1 WR Temp. RC Cold Leg B2 NR Temp.	°F °F	520-620 50-650 520-620
7.	A1495 A1416 A1418	RC Cold Leg B2 WR Temp. RC Loop A WR Press. 1 RC Loop A WR Press. 2	°F PSIG PSIG	50-650 0-2500 0-2500
8.	A1417 A1939 A1940	RC Loop B WR Press. RC PRZR LVL 1 Corr. RC PRZR LVL 2 Corr.	PSIG In. H ₂ O In. H ₂ O	0-2500
	A1941 A1717 A1718 A1718	RC PRZR LVL 3 Corr. RC PRZR LVL 1 Ur corrected RC PRZR LVL 2 Uncorrected	In. H ₂ 0 In. H ₂ 0 In. H ₂ 0	0-400 0-400 0-400
9. 10.	A1719 A1009 A1536 A1537	RC PRZR LVL 3 Uncorrected CA Boron Conc. PPM NI 1 SR Flux NI 2 SR Flux	In. H ₂ O PPM CPS CPS	0-400 0-2050 0.1-E6 0.1-E6
11.	<u>A1540</u> A1541	NI 3 IR Flux NI 4 IR Flux	E ^{_6} Amps E ^{_6} Amps	E ¹¹ -E ³ E ¹¹ -E ³
12.	A1544 A1545 A1546	NI 5 PR Flux NI 6 PR Flux NI 7 PR Flux	% % % %	0-125 0-125 0-125
13. 14. 15. 16.	A1547 D2306 D2307 D2308 D2309	NI 8 PR Flux RC Pump A1 ON (OFF) RC Pump A2 ON (OFF) RC Pump B1 ON (OFF) RC Pump B2 ON (OFF)	<i>/</i> 0	0-125
<u>B</u>				
1.	A1026 A1213 A1214	FDW SG A Full LVL FDW SG A TR A LVL FDW SG A TR A LVL	In. H ₂ 0 In. H ₂ 0 In. H ₂ 0	0-650 0-388 0-388

Underline indicates points used on data sheet.

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Oconee Unit 3

<u>Point I.D.</u>	Description	Units	Range
<u>B (cont'd)</u> 2. <u>A1031</u> <u>A1215</u> <u>A1216</u> 3. <u>A1470</u> <u>A1471</u> 4. <u>A1466</u> <u>A1467</u> 5. <u>A1563</u> <u>A1564</u> 6. <u>A0012</u> 7. <u>A0013</u> 8. <u>A0158</u> <u>A0014</u>	FDW SG B Full LVL FDW SG B TR A LVL FDW SG B TR B LVL MS Stm. Gen. A Press. 1 MS Stm. Gen. A Press. 2 MS Stm. Gen. B Press. 2 MS Stm. Gen. B Press. 2 FDW Flow A Comp. & Sel. FDW Flow A Comp. & Sel. EMR FDW Flow 1 SG A EMR FDW Flow 1 SG B C UST A LVL C UST B LVL	In. H_20 In. H_20 PSIG PSIG PSIG PSIG LBS/Hr. LBS/Hr. GPM GPM FT-H ₂ 0 FT-H ₂ 0	0-650 0-388 0-388 0-1200 0-1200 0-1200 0-1200 0-6E6 0-6E6 0-1200 0-1200 0-120 0-12
<u>C</u> 1. <u>A1044</u> 2. <u>A0944</u>	HP Letdn. Flow DW UST MKUP Flow	GPM LBS/HR	0-160 0-225000
\underline{D} 1. A1238 2. A1239 3. A1310 4. A1311 5. D2214 6. D2215 7. D2216 8. D2125 9. D2127 10. D2129	HP Loop A inj. Flow HP Loop B Inj. Flow LP Loop A Inj. Flow LP Loop B Inj. Flow LP Pump A ON (OFF) LP Pump B ON (OFF) LP Pump C ON (OFF) HP Pump B ON (OFF) HP Pump B ON (OFF) HP Pump C ON (OFF)	GPM GPM GPM GPM	0-1200 0-1200 0-1300 0-1300
<u>E</u> 1. <u>A1011</u> A1315 2. <u>A0043</u> <u>A0005</u> 3. <u>A0792</u> <u>A0793</u> 4. <u>A1465</u> 5. <u>A0049</u>	Reactor Bldg. Press. CH. A Reactor Bldg. Press. CH. B RBV Dome Temp. RBV RB LWR Temp. RB Sump Level CH. A RB Sump LVL CH. B CA A2 Conc. LWD RB NOR Sump LVL	PSIG PSIG °F Ft. Ft. Ft. % In. H ₂ 0	-5-175 -5-175 0-390 0-390 0-15 0-15 0-5 0-30

Underline indicates points used on data sheet.

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Oconee Unit 3

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

FIGURE 9

in the

SELECTIVE SIGNALING SYSTEM LAYOUT - OCONEE

