

VIRGINIA ELECTRIC AND POWER COMPANY

SURRY POWER STATION

10 CFR 50 APPENDIX R REPORT - APPENDIX A

Summary Comparison of the 1984 Appendix R
ReAnalysis and the 1980-1982 Post-Fire
Safe Shutdown Review

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Safe Shutdown Review

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INTRODUCTION TO TABLES 1, 2, 3, AND 4

The attached tables are a comparison of the 1980-1982 Post-Fire Safe Shutdown Review and the 1984 Appendix R reanalysis. The 1980-1982 Post-Fire Safe Shutdown Review was sent to the NRC by VEPCO letters of October 31, 1980 and June 18, 1982 (Serial Numbers 885 and 363, respectively). It is noted that other correspondence on this subject was submitted in this time period.

The format of the four tables varies in the following manner. Tables 1 and 4 use a format of summarizing in the left-hand column statements from VEPCO's 1980-1982 review, and summarizing in the right-hand column the changes based on the 1984 reanalysis. Tables 2 and 3 use a format of summarizing in the left-hand column the NRC requests for information, and summarizing in the right-hand column the major differences between the 1980-1982 and the 1984 analyses.

A brief description of the attached tables is given below:

- o Table 1: Summary Comparison of Post-Fire Safe Shutdown Systems

In the left-hand column of Table 1, the post-fire safe shutdown systems used in the 1980-1982 review are listed by safe shutdown function. These systems were described in Attachment 1 of the VEPCO letter of October 31, 1980 and in Attachment 1 of the VEPCO letter of June 18, 1982. The right-hand column of Table 1 shows the systems that are used in the 1984 reanalysis.

- o Table 2: Summary Comparison by NRC Plant-Specific Request

In the left-hand column of Table 2, the NRC requests are listed that are specific to Surry. These requests are from the NRC letter to VEPCO of April 12, 1982. The responses to these requests were described in Parts A and B of the VEPCO letter of June 18, 1982. The right-hand column of Table 2 gives a summary of the major differences between the 1980-1982 and the 1984 analyses.

o Table 3: Summary Comparison by NRC Generic Request

In the left-hand column of Table 3, the NRC requests are listed that are generic. These requests are from the NRC Generic Letter 81-12 and its clarifications. The responses to these requests were described in the VEPCO letters of October 31, 1980 and June 18, 1982. The right-hand column of Table 3 gives a summary of the major differences between the 1980-1982 and the 1984 analyses.

o Table 4: Summary Comparison of VEPCO Commitments

Specific commitments were made by VEPCO in the June 18, 1982 (Part D) letter to the NRC. These commitments are listed in the left-hand column of Table 4. The right-hand column of Table 4 gives a summary of the major differences in the VEPCO commitments between the 1980-1982 and the 1984 analyses.

Because the 1980-1982 review is considered the "Base Case," only the major changes from the 1980-1982 review, as determined by the 1984 reanalysis, are given in the right-hand columns of the tables. It must be emphasized that these tables are not intended to show a cable-by-cable or line-by-line comparison between the 1980-1982 review and the 1984 reanalysis. These tables are a summary comparison, or overview, of changes. For detailed information, the reader is referred to the 1980-1982 review and the 1984 reanalysis.

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Table 1

SUMMARY COMPARISON OF POST-FIRE SAFE SHUTDOWN SYSTEMS

1980-1982 POST-FIRE SAFE SHUTDOWN SYSTEMS (REF: VEP CO LETTER SERIAL #885 DATED 10/31/80; VEP CO LETTER SERIAL #363 DATED 6/18/82)	1984 POST-FIRE SAFE SHUTDOWN SYSTEMS (REF: 1984 APPENDIX R REANALYSIS)
<p>(1) SYSTEMS REQUIRED FOR THE REACTIVITY CONTROL FUNCTION:</p> <p>(A) ROD CONTROL SYSTEM (B) CHEMICAL AND VOLUME CONTROL SYSTEM (C) CHARGING PUMP COOLING WATER SYSTEM (D) CHARGING PUMP SERVICE WATER SYSTEM (E) SERVICE WATER SYSTEM</p>	<p>NO CHANGES FROM THE 1980-1982 REVIEW WITH THE EXCEPTION OF THE SERVICE WATER SYSTEM AND THE CHARGING PUMP SERVICE WATER SYSTEM WHICH ARE NO LONGER NEEDED FOR THIS FUNCTION DUE TO MODIFICATION III-6 DESCRIBED IN CHAPTER 6 OF THE 1984 REANALYSIS REPORT.</p>
<p>(2) SYSTEMS REQUIRED FOR THE REACTOR COOLANT MAKEUP FUNCTION:</p> <p>(A) CHEMICAL AND VOLUME CONTROL SYSTEM (B) CHARGING PUMP COOLING WATER SYSTEM (C) CHARGING PUMP SERVICE WATER SYSTEM (D) SERVICE WATER SYSTEM</p>	<p>SEE COMMENTS FROM (1) ABOVE.</p>
<p>(3) SYSTEMS REQUIRED FOR THE REACTOR HEAT REMOVAL FUNCTION:</p> <p>(A) AUXILIARY FEEDWATER SYSTEM (B) MAIN STEAM SYSTEM (C) SERVICE WATER SYSTEM (D) RESIDUAL HEAT REMOVAL SYSTEM* (E) COMPONENT COOLING WATER SYSTEM* (F) PRESSURIZER HEATERS*</p> <p>* COLD SHUTDOWN ONLY</p>	<p>IN THE 1980-1982 REVIEW, ONE METHOD OF MAINTAINING SYSTEM PRESSURE WAS TO REPAIR PRESSURIZER HEATER CABLES. CREDIT WILL NOT BE TAKEN FOR THE HEATERS IN THE 1984 REVIEW. IN ADDITION, SEVERAL ADDITIONAL MANUAL ACTIONS HAVE BEEN IDENTIFIED IN ORDER TO OPERATE THE SAME SYSTEMS. AN ALTERNATIVE LETDOWN PATH MAY BE USED IF THE NORMAL AND EXCESS LETDOWN PATHS ARE NOT AVAILABLE (AS DESCRIBED IN CHAPTER 3 OF THE 1984 REANALYSIS REPORT).</p>
<p>(4) INSTRUMENTATION REQUIRED FOR THE PROCESS MONITORING FUNCTION. DIRECT READINGS OF THE FOLLOWING PROCESS VARIABLES ARE OR WILL BE AVAILABLE AT THE REMOTE MONITORING PANEL:</p> <p>(A) PRESSURIZER PRESSURE (B) PRESSURIZER LEVEL (C) REACTOR COOLANT HOT LEG TEMPERATURE (D) REACTOR COOLANT COLD LEG TEMPERATURE (E) STEAM GENERATOR LEVEL (F) STEAM GENERATOR PRESSURE (G) SOURCE RANGE NEUTRON FLUX</p>	<p>NO CHANGES FROM THE 1980-1982 REVIEW WITH THE FOLLOWING TWO EXCEPTIONS. THE EMERGENCY CONDENSATE STORAGE TANK LEVEL IS REQUIRED FOR HOT AND COLD SHUTDOWN AND RHR PUMP DISCHARGE TEMPERATURE IS REQUIRED FOR COLD SHUTDOWN.</p>

1980-1982 POST-FIRE SAFE SHUTDOWN SYSTEMS (REF: VEPCO LETTER SERIAL #885 DATED 10/31/80; VEPCO LETTER SERIAL #363 DATED 6/18/82)	1984 POST-FIRE SAFE SHUTDOWN SYSTEMS (REF: 1984 APPENDIX R REANALYSIS)
<p>(5) SYSTEMS REQUIRED FOR SUPPORT FUNCTIONS:</p> <ul style="list-style-type: none"> (A) EMERGENCY DISTRIBUTION SYSTEM (B) CHARGING PUMP COOLING WATER SYSTEM (C) CHARGING PUMP SERVICE WATER SYSTEM (D) SERVICE WATER SYSTEM (E) COMPONENT COOLING WATER SYSTEM (F) CONTAINMENT INSTRUMENT AIR SYSTEM OR STATION INSTRUMENT AIR SYSTEM 	<p>ADDITIONAL SYSTEMS REQUIRED FOR SUPPORTING FUNCTIONS HAVE BEEN FORMALLY INCLUDED: EMERGENCY LIGHTING, EMERGENCY COMMUNICATIONS, AND VENTILATION SYSTEMS FOR CERTAIN FIRE AREAS. THESE SYSTEMS WERE NOT SPECIFICALLY IDENTIFIED IN THE 1980-1982 REVIEW AS SYSTEMS REQUIRED FOR SUPPORTING FUNCTIONS. THESE SYSTEMS HAVE BEEN FULLY EVALUATED IN THE 1984 REVIEW. THE CHARGING PUMP SERVICE WATER SYSTEM IS NO LONGER REQUIRED AS DISCUSSED IN (1) ABOVE. INSTRUMENT AIR SYSTEMS ARE NO LONGER REQUIRED SINCE AN ALTERNATIVE PROCEDURE MAY BE USED FOR OPERATING THE REQUIRED AIR-OPERATED VALVES.</p>

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Table 2

SUMMARY COMPARISON BY NRC PLANT-SPECIFIC REQUEST

NRC PLANT-SPECIFIC REQUESTS FOR ADDITIONAL INFORMATION (REF: NRC LETTER TO VEPCO OF APRIL 12, 1982, ENCLOSURE 1)	CHANGES FROM THE 1980-1982 POST-FIRE SAFE SHUTDOWN REVIEW BASED ON 1984 APPENDIX R REANALYSIS
1. PROVIDE A POINT BY POINT RESPONSE WITH RESPECT TO THE INTERACTIONS OF ASSOCIATED CIRCUITS AS OUTLINED IN ENCLOSURE 2 OF THE FEBRUARY 20, 1981 LETTER (INCLUDING ALL REQUESTED TABLES).	SEE TABLE 3.
2. STATE CONFIRMATION THAT THE RELOCATED CHARGING PUMP SERVICE WATER PUMPS AND THE ASSOCIATED PIPING WILL BE INSTALLED TO THE SAME LEVEL OF CAPABILITY AS BEFORE RELOCATION.	THIS REQUEST IS NO LONGER APPLICABLE DUE TO MODIFICATION III-6 DESCRIBED IN CHAPTER 6 OF THE 1984 REANALYSIS REPORT.

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Table 3

SUMMARY COMPARISON BY NRC GENERIC REQUEST

NRC GENERIC REQUESTS FOR ADDITIONAL INFORMATION (REF: GENERIC LETTER 81-12 AND CLARIFICATIONS)	CHANGES FROM THE 1980-1982 POST-FIRE SAFE SHUTDOWN REVIEW BASED ON 1984 APPENDIX R REANALYSIS
<p>(1) IDENTIFY THOSE AREAS OF THE PLANT THAT WILL NOT MEET THE REQUIREMENTS OF SECTION III.G.2 OF APPENDIX R AND, THUS ALTERNATIVE SHUTDOWN WILL BE PROVIDED. ADDITIONALLY, PROVIDE A STATEMENT THAT ALL OTHER AREAS OF THE PLANT ARE OR WILL BE IN COMPLIANCE WITH SECTION III.G.2 OF APPENDIX R.</p>	<p>A DETAILED REVIEW OF POST-FIRE MANUAL ACTIONS HAS RESULTED IN THE ADDITION OF TWO NEW ALTERNATE SHUTDOWN FIRE AREAS:</p> <ul style="list-style-type: none"> - TURBINE BUILDING - MECHANICAL EQUIPMENT ROOM NO. 3 <p>THE AUXILIARY BUILDING HAS BEEN REDEFINED FROM TWO FIRE ZONES TO ONE FIRE AREA.</p>
<p>(a) LIST THE SYSTEM(S) OR PORTIONS THEREOF USED TO PROVIDE THE NORMAL SHUTDOWN CAPABILITY ASSUMING LOSS OF OFF-SITE POWER.</p>	<p>REFER TO TABLE 1 WHICH LISTS THESE SYSTEMS.</p>
<p>(b) FOR THOSE SYSTEMS IDENTIFIED IN "a" FOR WHICH ALTERNATE OR DEDICATED SHUTDOWN CAPABILITY MUST BE PROVIDED, LIST THE EQUIPMENT AND COMPONENTS OF THE NORMAL SHUTDOWN SYSTEM IN THE FIRE AREA AND IDENTIFY THE FUNCTIONS OF THE CIRCUITS OF THE NORMAL SHUTDOWN SYSTEM IN THE FIRE AREA (POWER TO WHAT EQUIPMENT, CONTROL OF WHAT COMPONENTS AND INSTRUMENTATION).</p> <p>(continued on page 2)</p>	<p>THE METHODOLOGY FOR PERFORMING THE CABLE SEPARATION ANALYSIS IS BASICALLY THE SAME FOR THE 1980-1982 REVIEW AND THE 1984 REANALYSIS. HOWEVER, IN THE 1984 REANALYSIS, THE NUMBER OF FIRE AREAS REQUIRING ALTERNATIVE SHUTDOWN AND THE LEVEL OF DETAIL OF THE CABLE AND EQUIPMENT SEPARATION ANALYSIS HAVE INCREASED.</p>

<p>NRC GENERIC REQUESTS FOR ADDITIONAL INFORMATION (REF: GENERIC LETTER 81-12 AND CLARIFICATIONS)</p>	<p>CHANGES FROM THE 1980-1982 POST-FIRE SAFE SHUTDOWN REVIEW BASED ON 1984 APPENDIX R REANALYSIS</p>
<p>(b) continued</p> <p>DESCRIBE THE SYSTEM(S) OR PORTIONS THEREOF USED TO PROVIDE THE ALTERNATIVE SHUTDOWN CAPABILITY FOR THE FIRE AREA AND PROVIDE A TABLE THAT LISTS THE EQUIPMENT AND COMPONENTS OF THE ALTERNATIVE SHUTDOWN SYSTEM FOR THE FIRE AREA. FOR THE ALTERNATIVE SYSTEM, IDENTIFY THE FUNCTION OF THE NEW CIRCUITS BEING PROVIDED, THE LOCATION (FIRE ZONE) OF THE ALTERNATIVE SHUTDOWN EQUIPMENT AND/OR CIRCUITS THAT BYPASS THE FIRE AREA AND VERIFY THAT THE ALTERNATIVE SHUTDOWN EQUIPMENT AND/OR CIRCUITS ARE SEPARATED FROM THE FIRE AREA IN ACCORDANCE WITH SECTION 111.G.2.</p>	<p>CHANGES ARE ON PREVIOUS PAGE</p>
<p>(c)</p> <p>PROVIDE DRAWINGS OF THE ALTERNATIVE SHUTDOWN SYSTEM(S) WHICH HIGHLIGHT ANY CONNECTIONS TO THE NORMAL SHUTDOWN SYSTEMS (P&IDs FOR PIPING AND COMPONENTS, AND ELEMENTARY WIRING DIAGRAMS). SHOW THE ELECTRICAL LOCATION OF ALL BREAKERS FOR POWER CABLES, AND ISOLATION DEVICES OF CONTROL AND INSTRUMENTATION CIRCUITS FOR THE ALTERNATIVE SHUTDOWN SYSTEMS FOR THAT FIRE AREA.</p>	<p>DRAWINGS SUBMITTED IN THE 1980-1982 REVIEW ARE GENERALLY STILL APPLICABLE; HOWEVER, CURRENT ISSUES OF ALL DRAWINGS ARE AVAILABLE AT THE SITE. DRAWINGS TO SUPPORT NEW MODIFICATIONS OR NEW ALTERNATIVE SHUTDOWN PROCEDURES ARE OR WILL BE AVAILABLE AT THE SITE.</p>
<p>(d)</p> <p>VERIFY THAT CHANGES TO SAFETY SYSTEMS WILL NOT DEGRADE SAFETY SYSTEMS; (E.G., NEW ISOLATION SWITCHES AND CONTROL SWITCHES SHOULD MEET DESIGN CRITERIA AND STANDARDS IN THE FSAR FOR ELECTRICAL EQUIPMENT IN THE SYSTEM THAT THE SWITCH IS TO BE INSTALLED; CABINETS THAT THE SWITCHES ARE TO BE MOUNTED IN SHOULD ALSO MEET THE SAME CRITERIA (FSAR) AS OTHER SAFETY-RELATED CABINETS AND PANELS; TO AVOID INADVERTENT ISOLATION FROM THE CONTROL ROOM, THE ISOLATION SWITCHES SHOULD BE KEYLOCKED OR ALARMED IN THE CONTROL ROOM IF IN THE "LOCAL" OR "ISOLATED" POSITION; PERIODIC CHECKS SHOULD BE MADE TO VERIFY THAT THE SWITCH IS IN THE PROPER POSITION FOR NORMAL OPERATION; AND A SINGLE TRANSFER SWITCH OR OTHER NEW DEVICE SHOULD NOT BE A SOURCE OF A FAILURE THAT CAUSES LOSS OF REDUNDANT SAFETY SYSTEMS).</p>	<p>NO CHANGE FROM THE 1980-1982 REVIEW WITH THE FOLLOWING EXCEPTION. THE ISOLATION SWITCHES ARE NOT INDIVIDUALLY ALARMED IN THE CONTROL ROOM WHEN IN THE LOCAL POSITION. HOWEVER, THE AUXILIARY SHUTDOWN PANEL IS PROVIDED WITH A KEYLOCKED DOOR WHICH ALARMS IN THE CONTROL ROOM WHEN THE DOOR IS OPENED.</p>

<p>NRC GENERIC REQUESTS FOR ADDITIONAL INFORMATION (REF: GENERIC LETTER 81-12 AND CLARIFICATIONS)</p>	<p>CHANGES FROM THE 1980-1982 POST-FIRE SAFE SHUTDOWN REVIEW BASED ON 1984 APPENDIX R REANALYSIS</p>
<p>(e) VERIFY THAT LICENSEE PROCEDURES HAVE BEEN OR WILL BE DEVELOPED WHICH DESCRIBE TASKS TO BE PERFORMED TO EFFECT THE SHUTDOWN METHOD. PROVIDE A SUMMARY OF THESE PROCEDURES OUTLINING OPERATOR ACTIONS.</p>	<p>NO CHANGE FROM THE 1980-1982 REVIEW. ADDITIONAL PROCEDURES WILL BE DEVELOPED FOR THE REQUIRED POST-FIRE OPERATIONS. THESE INCLUDE THE PROCEDURES FOR THE MODIFICATIONS COMMITTED TO IN THE 1980-1982 REVIEW, AND FOR THE REQUIRED ACTIONS IDENTIFIED DURING THE 1984 REANALYSIS.</p>
<p>(f) VERIFY THAT THE MANPOWER REQUIRED TO PERFORM THE SHUTDOWN FUNCTIONS USING THE PROCEDURES OF (e) AS WELL AS TO PROVIDE FIRE BRIGADE MEMBERS TO FIGHT THE FIRE IS AVAILABLE AS REQUIRED BY THE FIRE BRIGADE TECHNICAL SPECIFICATIONS.</p>	<p>BOTH THE 1980-1982 REVIEW AND THE 1984 REANALYSIS VERIFIED THAT THE REQUIRED MANPOWER IS AVAILABLE. THE 1984 REANALYSIS IS MORE COMPREHENSIVE IN ITS EVALUATION OF OPERATOR ACTIONS.</p>
<p>(g) PROVIDE A COMMITMENT TO PERFORM ADEQUATE ACCEPTANCE TESTS OF THE ALTERNATIVE SHUTDOWN CAPABILITY. THESE TESTS SHOULD VERIFY THAT: EQUIPMENT OPERATES FROM THE LOCAL CONTROL STATION WHEN THE TRANSFER OR ISOLATION SWITCH IS PLACED IN THE "LOCAL" POSITION AND THAT THE EQUIPMENT CANNOT BE OPERATED FROM THE CONTROL ROOM AND THAT EQUIPMENT OPERATES FROM THE CONTROL ROOM BUT CANNOT BE OPERATED AT THE LOCAL CONTROL STATION WHEN THE TRANSFER ISOLATION SWITCH IS IN THE "REMOTE" POSITION.</p>	<p>NO CHANGE FROM THE 1980-1982 REVIEW.</p>
<p>(h) PROVIDE TECHNICAL SPECIFICATIONS OF THE SURVEILLANCE REQUIREMENTS AND LIMITING CONDITIONS FOR OPERATION FOR THAT EQUIPMENT NOT ALREADY COVERED BY EXISTING TECHNICAL SPECIFICATIONS. FOR EXAMPLE, IF NEW ISOLATION AND CONTROL SWITCHES ARE ADDED TO A SHUTDOWN SYSTEM, THE EXISTING TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENTS SHOULD BE SUPPLEMENTED TO VERIFY SYSTEM/EQUIPMENT FUNCTION FROM THE ALTERNATE SHUTDOWN STATION CONSISTENT WITH THE GUIDELINES OF REGULATORY GUIDE 1.22 AND IEEE 338. CREDIT MAY BE TAKEN FOR EXISTING TESTS USING GROUP OVERLAPPING TEST CONCEPTS.</p>	<p>NO CHANGE FROM THE 1980-1982 REVIEW. TECHNICAL SPECIFICATIONS WILL BE SUBMITTED WHERE REQUIRED.</p>

<p>NRC GENERIC REQUESTS FOR ADDITIONAL INFORMATION (REF: GENERIC LETTER 81-12 AND CLARIFICATIONS)</p>	<p>CHANGES FROM THE 1980-1982 POST-FIRE SAFE SHUTDOWN REVIEW BASED ON 1984 APPENDIX R REANALYSIS</p>
<p>(i) FOR NEW EQUIPMENT COMPRISING THE ALTERNATIVE SHUTDOWN CAPABILITY, VERIFY THAT THE SYSTEMS AVAILABLE ARE ADEQUATE TO PERFORM THE NECESSARY SHUTDOWN FUNCTION. THE FUNCTIONS REQUIRED SHOULD BE BASED ON PREVIOUS ANALYSES, IF POSSIBLE (E.G., IN THE FSAR), SUCH AS A LOSS OF NORMAL AC POWER OR SHUTDOWN ON GROUP 1 ISOLATION (BWR). THE EQUIPMENT REQUIRED FOR THE ALTERNATIVE CAPABILITY SHOULD BE THE SAME OR EQUIVALENT TO THAT RELIED ON IN THE ABOVE ANALYSIS.</p>	<p>NO CHANGE FROM THE 1980-1982 REVIEW WITH THE FOLLOWING EXCEPTION. INDICATIONS ON THE AUXILIARY SHUTDOWN PANEL ARE NOT ISOLATED BY ISOLATION SWITCHES, BUT INDICATION IS AVAILABLE AT OTHER LOCATIONS.</p>
<p>(j) VERIFY THAT REPAIR PROCEDURES FOR COLD SHUTDOWN SYSTEMS ARE DEVELOPED AND MATERIAL FOR REPAIRS IS MAINTAINED ON SITE. PROVIDE A SUMMARY OF THESE PROCEDURES AND A LIST OF THE MATERIAL NEEDED FOR REPAIRS.</p>	<p>NO CHANGE FROM THE 1980-1982 REVIEW WITH THE FOLLOWING EXCEPTIONS. REPAIRS ARE NO LONGER REQUIRED FOR THE PRESSURIZER HEATER CABLES BECAUSE THE HEATERS ARE NOT NECESSARY TO ACHIEVE COLD SHUTDOWN. REPAIRS WILL BE REQUIRED FOR THE COMPONENT COOLING WATER PUMPS AND CABLES.</p>
<p>(1a) FOR EACH FIRE AREA WHERE AN ALTERNATIVE OR DEDICATED SHUTDOWN METHOD, IN ACCORDANCE WITH SECTION III.G.3 OF APPENDIX R IS PROVIDED, THE FOLLOWING INFORMATION IS REQUIRED TO DEMONSTRATE THAT ASSOCIATED CIRCUITS WILL NOT PREVENT OPERATION OR CAUSE MALOPERATION OF THE ALTERNATIVE OR DEDICATED SHUTDOWN METHOD. PROVIDE A TABLE THAT LISTS ALL THE POWER CABLES IN THE FIRE AREA THAT CONNECT TO THE SAME POWER SUPPLY OF THE ALTERNATIVE OR DEDICATED SHUTDOWN METHOD AND THE FUNCTION OF EACH POWER CABLE LISTED (I.E., POWER FOR RHR PUMP).</p>	<p>THE METHODOLOGY FOR PERFORMING THE ANALYSIS OF ASSOCIATED CIRCUITS BY COMMON POWER SUPPLY IS THE SAME IN THE 1980-1982 REVIEW AND THE 1984 REANALYSIS. IN THE 1984 REANALYSIS THE SCOPE OF THE ELECTRICAL BREAKER COORDINATION STUDY AND THE NUMBER OF FIRE AREAS REQUIRING ALTERNATIVE SHUTDOWN HAVE INCREASED.</p> <p>DRAWINGS AND BREAKER COORDINATION STUDIES WILL BE AVAILABLE AT THE SITE TO DEMONSTRATE THAT ASSOCIATED CIRCUITS WILL NOT PREVENT OR CAUSE MALOPERATION OF ALTERNATIVE SHUTDOWN METHODS.</p>
<p>(b) PROVIDE A TABLE THAT LISTS ALL THE CABLES IN THE FIRE AREA THAT WERE CONSIDERED FOR POSSIBLE SPURIOUS OPERATION WHICH WOULD ADVERSELY AFFECT SHUTDOWN AND THE FUNCTION OF EACH CABLE LISTED.</p>	<p>THE METHODOLOGY AND ASSUMPTIONS USED BY VEPCO IN ITS ANALYSIS OF SPURIOUS OPERATIONS HAVE CHANGED SINCE THE 1980-1982 REPORT. THE RESULTS OF THAT REANALYSIS WILL BE INCLUDED IN VEPCO'S SUBMITTAL OF THE 1984 REANALYSIS.</p>

NRC GENERIC REQUESTS FOR ADDITIONAL INFORMATION (REF: GENERIC LETTER 81-12 AND CLARIFICATIONS)	CHANGES FROM THE 1980-1982 POST-FIRE SAFE SHUTDOWN REVIEW BASED ON 1984 APPENDIX R REANALYSIS
(c) PROVIDE A TABLE THAT LISTS ALL THE CABLES IN THE FIRE AREA THAT SHARE A COMMON ENCLOSURE WITH CIRCUITS OF THE ALTERNA- TIVE OR DEDICATED SHUTDOWN SYSTEMS AND THE FUNCTION OF EACH CABLE LISTED.	REFER TO ITEM (b), ON PAGE 4
(d) SHOW THAT FIRE-INDUCED FAILURES (HOT SHORTS, OPEN CIRCUITS OR SHORTS TO GROUND) OF EACH OF THE CABLES LISTED IN a, b AND c WILL NOT PREVENT OPERATION OR CAUSE MALOPERATION OF THE ALTERNATIVE OR DEDICATED SHUTDOWN METHOD.	REFER TO ITEM (b), ON PAGE 4
(e) FOR EACH CABLE LISTED IN a, b AND c WHERE NEW ELECTRICAL ISOLATION HAS BEEN PROVIDED OR MODIFICATION TO EXISTING ELECTRICAL ISOLATION HAS BEEN MADE, PROVIDE DETAILED ELECTRICAL SCHEMATIC DRAWINGS THAT SHOW HOW EACH CABLE IS ISOLATED FROM THE FIRE AREA.	REFER TO ITEM (b), ON PAGE 4

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Table 4

SUMMARY COMPARISON OF VEPCO COMMITMENTS

<p align="center">VEPCO COMMITMENTS (REF: VEPCO LETTER SERIAL NO. 363 DATED JUNE 18, 1982</p>	<p align="center">CHANGES FROM THE 1980-1982 POST-FIRE SAFE SHUTDOWN REVIEW BASED ON 1984 APPENDIX R REANALYSIS</p>
<p>1. ADDITIONAL INSTRUMENTATION WILL BE ADDED TO THE REMOTE MONITORING PANEL. THE CIRCUITS FOR THIS INSTRUMENTATION WILL BE ROUTED THROUGH SEPARATE FIRE AREAS FROM THE NORMAL INSTRUMENTATION.</p> <p>a) STEAM GENERATOR PRESSURE</p> <p>b) REACTOR COOLANT COLD LEG TEMPERATURE</p> <p>c) SOURCE RANGE NEUTRON FLUX</p> <p>2. DIESEL GENERATOR CONTROL CIRCUIT TO LOCAL PANEL WILL BE ELECTRICALLY ISOLATED SO THAT A FIRE IN ANY OTHER AREA OF THE PLANT WILL NOT AFFECT ITS OPERATION.</p> <p>3. ASSURE COORDINATION OF THE 480V 225A FRAME SIZE BREAKERS.</p> <p>4. MAIN BREAKERS ON THE VITAL BUS PANELS WILL BE REPLACED WITH MOLDED CASE SWITCHES.</p>	<p>NO CHANGE FROM THE 1982 REVIEW.</p> <p>NO CHANGE FROM THE 1982 REVIEW.</p> <p>NO CHANGE FROM THE 1982 REVIEW.</p> <p>NO CHANGE FROM THE 1982 REVIEW.</p> <p>NO CHANGE FROM THE 1982 REVIEW.</p> <p>THE 1984 APPENDIX R REANALYSIS HAS DETERMINED THAT CURRENT BREAKERS ARE SATISFACTORY. SEE CHAPTER 6, MODIFICATION II-3, OF THE 1984 REPORT.</p>

<p>VEPCO COMMITMENTS (REF: VEPKO LETTER SERIAL NO. 363, DATED JUNE 18, 1982)</p>	<p>CHANGES FROM THE 1980-1982 POST-FIRE SAFE SHUTDOWN REVIEW BASED ON 1984 APPENDIX R REANALYSIS</p>
<p>5. 480/120V CONTROL TRANSFORMERS OF CLASS 1E MOTOR CONTROL CENTER WILL BE REPLACED WITH ENCAPSULATED TRANSFORMERS OR FUSED.</p> <p>6. ADDITIONAL PROCEDURES WILL BE WRITTEN TO COVER THE FOLLOWING AREAS:</p> <p>a) COMPLETE LINEUP OF THE ALTERNATE METHOD OF CHARGING.</p> <p>b) PROCEDURES TO REQUIRE BREAKERS ON MOVs 1700 AND 1701 TO BE OPEN WHEN REACTOR COOLANT PRESSURE REQUIRES THE VALVES TO BE CLOSED.</p> <p>c) EMERGENCY CLOSURE OF THE DECAY HEAT RELEASE VALVES.</p> <p>d) EMERGENCY CLOSURE OF THE PRESSURIZER RELIEF VALVES.</p> <p>e) REMOTE OPERATION OF DIESEL GENERATORS.</p> <p>7. CHARGING PUMP SERVICE WATER PUMP RELOCATION IN THE TURBINE BUILDING.</p>	<p>NO CHANGE FROM THE 1982 REVIEW.</p> <p>NO CHANGE FROM THE 1982 REVIEW.</p> <p>NO CHANGE FROM THE 1982 REVIEW.</p> <p>THE METHODOLOGY AND ASSUMPTIONS USED BY VEPKO IN ITS ANALYSIS OF SPURIOUS OPERATIONS HAVE CHANGED SINCE THE 1982 REVIEW. IN THE 1984 REANALYSIS A PROCEDURE FOR THE EMERGENCY CLOSURE OF THE DECAY HEAT RELEASE VALVES, 1-HCV-MS-104 AND 2 HCV-MS-201, IS NO LONGER REQUIRED BECAUSE THE UPSTREAM BLOCK VALVES FOR THE DECAY HEAT RELEASE VALVES WILL BE CHANGED TO NORMALLY SHUT.</p> <p>THE METHODOLOGY AND ASSUMPTIONS USED BY VEPKO IN ITS ANALYSIS OF SPURIOUS OPERATIONS HAVE CHANGED SINCE THE 1982 REVIEW. THE RESULTS OF THE 1984 REANALYSIS REQUIRES A HARDWARE MODIFICATION AND A CHANGE TO THE PROCEDURE FOR THE EMERGENCY CLOSURE OF THE PRESSURIZER POWER OPERATED RELIEF VALVES.</p> <p>NO CHANGE FROM THE 1982 REVIEW.</p> <p>NO CHANGE FROM THE 1982 REVIEW. HOWEVER, THIS SYSTEM WILL BE ABANDONED WHEN MODIFICATION III-6, DESCRIBED IN CHAPTER 6, IS COMPLETED.</p>