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SR. VICE PRESIDENT  
NUCLEAR POWER

JUN 6 1985

Mr. Hugh L. Thompson, Jr.  
Division of Licensing  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Docket Nos. 50-277  
50-278

Subject: Peach Bottom Atomic Power Station, Units 2 and 3  
Structural Steel Survivability Analysis

References: (1) Letter V. S. Boyer to H. L. Thompson, Jr.,  
dated March 29, 1985

(2) Letter G. E. Gears to E. G. Bauer, Jr.,  
dated March 18, 1985

Dear Mr. Thompson:

1. The reference (1) letter transmitted the structural steel calculations for Peach Bottom Units 2 and 3. Included with the submittal was a summary of plant areas which the structural steel calculations revealed had fire durations and temperatures exceeding the structural steel temperature acceptance criteria. Attachment No. 1 details our evaluation of each area, including proposed fixes.
2. In addition to the area evaluations, the following evaluations were performed:
  - a) A structural evaluation was made of the steel framing in several areas; including the Diesel Bays, the Fan Room, and the High Pressure Service Water Pump Bays; to evaluate the effects on the adjacent walls should the structural steel in the ceilings of the areas fail. The ceilings in these rooms are not Appendix R III.G.2 fire barriers; however, the walls at certain locations are. The conclusion of the evaluation was that structural steel failure alone will not affect the walls separating fire areas. It is important to note that the structural evaluation performed was subjective in that it included the predicted actual behavior of a steel framing system at elevated temperatures and assumed failure modes leading to collapse of the steel.

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- b) Failures of particular members of safe shutdown fire barriers due to localized effects were evident in 7 plant areas and included a total of 25 beams plus the entire Cable Spreading Room. We are proposing the following alternatives to remedy these problems:
- 1) Where cable trays cross the axis of a beam in a perpendicular direction, we propose to coat the beam three feet in each direction from the area of flame impingement with fire proofing material or provide solid tray covers of a similar length for the cable tray. We have determined that cable derating is not required if we install tray covers. Since the problem associated with localized effects is direct flame impingement; fire proofing or solid tray covers will protect the beam.
  - 2) When a cable tray runs parallel to and beneath a beam, the entire beam will be coated with a three foot overlap at the ends or tray covers will be provided.
  - 3) Beams that are jeopardized by vertical trays will be coated five feet in each direction from the area of flame impingement.
  - 4) The jeopardized structural members will be evaluated to determine their structural significance. If the members are not required structurally, no protection will be provided.
  - 5) Structural steel protection will not be provided in the Cable Spreading Room. The area temperature did not cause a structural problem when based on combustible loading; however, every beam failed due to localized effects because of the close proximity of raceway to the ceiling. The Cable Spreading Room ceiling is not a III.G.2 fire barrier. Automatic carbon dioxide is provided for the room. The CO<sub>2</sub> system is actuated by cross-zoned smoke detectors. Early warning from one of the twenty-three smoke detectors and automatic actuation of the CO<sub>2</sub> system will assure control of a fire in the area.

3. We have not asked for specific exemption requests for each problem fire area or individual problem beam. The Structural Steel Survivability Analysis has shown that the structural steel forming a part of or supporting III.G.2 fire barriers, either by itself or with associated installed fire protection and security features, provides "a fire resistance equivalent to that required of the barrier"; otherwise we have upgraded the steel protection to meet Appendix R III.G.2 requirements.
4. We have included as Attachment No. 2 additional calculations performed for plant areas not covered in the initial scope. This should complete the evaluation of all III.G.2 fire barriers. A new calculation summary has been included also.

If you have any questions, do not hesitate to contact us. Our plan is to proceed with the necessary modifications as soon as we receive NRC approval of our proposed plan.

Very truly yours,

*V. S. Boyer*

GJR/dmm/05288505

## ATTACHMENT NO. 1

The structural steel survivability analysis identified 27 plant areas which had expected fire durations and structural steel temperatures which did not meet the steel temperature acceptance criteria. Our evaluation of these areas is as follows:

1. Radwaste Building, el. 135, Medical Station and Corridor, calc. #10 - A review of the Peach Bottom safe shutdown analysis and fire barrier drawings revealed that the ceilings of these areas are not Appendix R, III.G.2 fire barriers, and therefore structural steel protection is not required.
2. Radwaste Building, el. 135, Unit 2 M-G Set Room, calc. #19 - The M-G set room did not pose a problem with one door open for a ventilation controlled fire. Area gas temperatures for case number 1 only reached 762°F. Case number 2 with two doors open did reach a gas temperature of 1272°F with the steel reaching the failure temperature at the 135 minute mark. We do not feel it is credible to have two supervised security doors open for any extended length of time. For that matter, we do not feel it is credible to have one supervised security door open for any length of time. However, due to the large quantity of combustible liquid in the area, we propose to extend an existing sprinkler system provided for the fluid drive and the generator to the entire floor area. Due to the existence of energized load centers in the room, the extended sprinkler system will be installed to provide floor area coverage for an oil spill fire only. The sprinkler system will be designed and installed by a qualified fire protection engineer with "System Interaction" concerns a major consideration. The installation will not be a strict NFPA area sprinkler system.
3. Turbine Building, el. 135, Emergency Switchgear Rooms (eight rooms), calc. #20 - We do not plan to provide structural steel protection in these rooms. The steel survivability calculations indicate that for a one door open fire scenario the steel does not reach the critical steel temperature for 30 minutes. The doors to the switchgear rooms are electrically supervised security doors with a card reader at the entrance to monitor access. These door locations are also located in fire barriers. Should one of these doors be left open, a security guard would be dispatched to the location immediately. If it is necessary to leave the door open during modification work, a fire watch would be provided in accordance with plant technical specifications.



In addition, these rooms have been sealed under the recent penetration sealing program, and uncontrolled air flow necessary to support combustion, into and out of the rooms is an absolute minimum.

Early warning smoke detectors are also provided in the rooms which alarm in the Control Room at elevation 165, assuring prompt response to any fire condition.

Therefore, there is no foreseeable circumstance by which a door could be left open or a fire situation develop that would not be immediately identified.

The existing fire protection and security features assure that the exposed steel is sufficient to provide a fire resistance equivalent to that required of the barrier.

4. Radwaste Building, el. 165, Fan Room, calc. #22 - This particular ceiling is not a safe shutdown barrier; therefore structural steel protection is not required.
5. Circ. Water Pump House, High Pressure Service Water Pump Bay (two rooms), calc. #25 - The fire barrier of concern in these areas is a 1/4 to 3/8" thick built up steel plate wall between the two service water pump bays. We do not plan to provide steel protection for this barrier. This barrier was approved as acceptable by the NRC in the 1979 Peach Bottom Safety Evaluation Report. That position was reaffirmed by the NRC in reference (2) when an exemption request was granted to Appendix R Section III.G.3 based on low combustible loading and the premise that a fire would be extinguished in a very short time.
6. Diesel Generator Building, Diesel Generator Rooms (four rooms), calc. #27 - The ceilings of these rooms are not III.G.2 fire barriers and therefore do not require fire protection of structural steel. However, these rooms are provided with a fire detection system and an automatic carbon dioxide system which would quickly detect and control a diesel vault fire.
7. Diesel Building, Cardox Room, calc. #28 - The ceiling of this room is not a III.G.2 fire barrier; therefore structural steel protection is not required.
8. Reactor Building, el. 88, Unit 2 HPCI Room, calc. #30 - The HPCI room is provided with early warning fire detection as well as an automatic carbon dioxide fire protection system. The automatic CO<sub>2</sub> system will assure that a fire in the HPCI room is promptly discovered and controlled and the structural steel in the room will not be jeopardized.
9. Reactor Building, el. 88, Unit 3 HPCI Room, calc. #35 - See item number 8.

10. Reactor Building, el. 91'-6, Unit 2, C RHR Pump and HX Room, calc. #47 - The calculation for this area indicates that it is necessary for three access doors to be left open to provide sufficient air to produce a fire that would jeopardize the steel in the room. The doors to the room are all inside secure areas. The area is also a radiation area requiring Health Physics examination prior to entry. Smoke detection is provided in the room. Based on the above, no structural steel protection will be provided.
11. Radwaste Building, el. 135, Unit 3 M-G Set Room, calc. #53 - See Item number 2.
12. Radwaste Building, el. 135, Radwaste Control Room, calc. #54 - See item number 1.
13. Turbine Building, el. 135, Battery Room (four rooms), calc. #90 - These rooms are similar to the switchgear rooms evaluated under Item number 3. The walls are fire barriers; the doors are electrically supervised and require card reader access. There is little likelihood of any access door being left open without a fire watch posted per technical specification requirements. These rooms have also been sealed under the penetration sealing program and uncontrolled airflow into or out of the rooms is an absolute minimum. Additionally, smoke detectors are provided in each room; and the electrolyte in the batteries would provide a quenching effect in the event of a fire in the rooms. Based on the above, we do not plan to provide structural steel protection for this area.

**PLC** *Professional Loss Control, Inc.*

DOCKETS 50-277  
50-278

PEACH BOTTOM  
STRUCTURAL STEEL SURVIVABILITY ANALYSIS

Submitted: May 30, 1985

## PEACH BOTTOM STRUCTURAL STEEL SURVIVABILITY ANALYSIS

| PLC # | BIDS | UNIT | ELEV  | AREA DESC                     | CASE | CASE DESC                     | FIRE DUR | FIRE TEMP | LOC. HTG. REMARKS | GEN. HTG. REMARKS                       |
|-------|------|------|-------|-------------------------------|------|-------------------------------|----------|-----------|-------------------|---|
| 1     | RWB  | 2    | 88'   | RCIC PUMP ROOM                |      | NO STEEL                      |          |           |                   |   |
| 2     | RWB  | C    | 91.5' | STANBY GAS<br>TREATMENT ROOM  |      | NO STEEL                      |          |           |                   |   |
| 3     | RWB  | 3    | 91.5' | RHR PUMP & HX RM              |      | NO STEEL                      |          |           |                   |   |
| 4     | RXB  | 2    | 91.5' | TORUS AREA                    | 1    | FUEL CONTROLLED               | 180      | 107       |                   |   |
| 5     | RXB  | 2    | 91.5' | S. RHR PUMP &<br>HX RM        | 1    | VENTILATION<br>CONTROLLED     | 42       | 944       |                   |   |
| 5     | RXB  | 2    | 91.5' | S. RHR PUMP &<br>HX RM        | 2    | VENTILATION<br>CONTROLLED     | 24       | 1176      |                   | GEN. HEATING 11100<br>STEEL TEMP. 11100 |
| 6     | RXB  | 2    | 91.5' | NW RHR PUMP &<br>HX RM        | 1    | VENTILATION<br>CONTROLLED     | 62       | 828       |                   |   |
| 6     | RXB  | 2    | 91.5' | NW RHR PUMP &<br>HX RM        | 2    | VENTILATION<br>CONTROLLED     | 31       | 1085      |                   |   |
| 6     | RXB  | 2    | 91.5' | NW RHR PUMP &<br>HX RM        | 3    | VENTILATION<br>CONTROLLED     | 21       | 1277      |                   | GEN. HEATING 11100<br>STEEL TEMP. 11100 |
| 7     | RXB  | 2    | 116'  | N. VACUUM<br>BREAKER RM       | 1    | FUEL CONTROLLED               | 124      | 539       | 1 CASE FAILS      |   |
| 8     | RXB  | 2    | 116'  | S. VACUUM<br>BREAKER RM       | 1    | FUEL CONTROLLED               | 160      | 491       | 2 CASES FAIL      |   |
| 9     | RXB  | 2    | 135'  | GEN FL AREA<br>N. RX CL       | 1    | FUEL CONTROLLED               | 180      | 622       | 9 CASES FAIL      |   |
| 10    | RWB  | C    | 135'  | MEDICAL STATION<br>& CORRIDOR | 1    | ALL CABLES<br>BURNING SIMULT. | 74       | 1799      | 2 CASES FAIL      | ALL STEEL FAILS                         |
| 11    | RWB  | C    | 150'  | RADWASTE H&V<br>EQUIP. COMPT. | 1    | FUEL CONTROLLED               | 79       | 269       |                   |   |
| 12    | RWB  | 2    | 165'  | MG SET FAN RM                 |      | NO COMBUSTIBLES               |          |           |                   |   |
| 13    | RWB  | 3    | 165'  | MG SET FAN RM                 |      | NO COMBUSTIBLES               |          |           |                   |   |
| 14    | RXB  | 2    | 195'  | GEN FL AREA<br>W. OF RX CL    | 1    | FUEL CONTROLLED               | 152      | 156       |                   |   |
| 15    | RX   | 2    | 195'  | GEN FL AREA<br>E. OF RX CL    | 1    | FUEL CONTROLLED               | 180      | 395       |                   |   |
| 16    | RXB  | 2    | 195'  | VENT. EQUIP &<br>FAN RM       | 1    | FUEL CONTROLLED               | 180      | 465       | 3 CASES FAIL      |   |
| 17    | RWB  | 3    | 116'  | COOLING WATER<br>EQUIP. RM    |      | NO STEEL                      |          |           |                   |   |
| 18    | RWB  | C    | 135'  | PERSONNEL DECON.<br>STATION   | 1    | FUEL CONTROLLED               | 84       | 621       | 5 CASES FAIL      |   |



## PEACH BOTTOM STRUCTURAL STEEL SURVIVABILITY ANALYSIS

| PLC # | BLDG | UNIT | ELEV  | AREA DESC                           | CASE | CPSE DESC                     | FIRE DUR | FIRE TEMP | LOC. HTG. REMARK | GEN. HTG. REMARKS |
|-------|------|------|-------|-------------------------------------|------|-------------------------------|----------|-----------|------------------|-------------------|
| 19    | RWB  | 2    | 135'  | MG SET RM                           | 1    | VENTILATION<br>CONTROLLED     | 180      | 762       | 2 CASES FAIL     |                   |
| 19    | RWB  | 2    | 135'  | MG SET RM                           | 2    | VENTILATION<br>CONTROLLED     | 180      | 1272      | 2 CASES FAIL     | ALL STEEL FAILS   |
| 20    | TB   | 2    | 135'  | EMER. SWGR. RM<br>#265              | 1    | FUEL CONTROLLED               | 104      | 1307      | 2 CASES FAIL     | ALL STEEL FAILS   |
| 20    | TB   | 2    | 135'  | EMER. SWGR. RM<br>#265              | 2    | ALL CABLES<br>BURNING SIMULT. | 72       | 1551      | 2 CASES FAIL     | ALL STEEL FAILS   |
| 21    | RXB  | 2    | 165'  | GEN FL AREA<br>S. OF RX CL          | 1    | FUEL CONTROLLED               | 180      | 612       | 1 CASE FAILS     |                   |
| 22    | RWB  | C    | 165'  | REMOTE SHUTDOWN<br>PANEL AREA       | 1    | FUEL CONTROLLED               | 180      | 1195      | 31 CASES FAIL    | ALL STEEL FAILS   |
| 22    | RWB  | C    | 165'  | REMOTE SHUTDOWN<br>PANEL AREA       | 2    | VENTILATION<br>CONTROLLED     | 180      | 1591      | 31 CASES FAIL    | ALL STEEL FAILS   |
| 23    | TB   | C    | 150'  | CABLE SPREADING RM                  | 1    | VENTILATION<br>CONTROLLED     | 180      | 688       | ALL BEAMS FAIL   |                   |
| 23    | TB   | C    | 150'  | CABLE SPREADING RM                  | 2    | VENTILATION<br>CONTROLLED     | 180      | 1082      | ALL BEAMS FAIL   |                   |
| 24    | TB   | C    | 116'  | COMMON EQUIP. AREA                  | 1    | FUEL CONTROLLED               | 180      | 717       | 12 CASES FAIL    |                   |
| 25    | TB   | C    | 150'  | COMPUTER RM                         | 1    | FUTURE ANALYSIS               |          |           |                  |                   |
| 26    | ECT  | 2    | 112'  | CRITICAL SERVICE<br>WATER PUMP AREA | 1    | VENTILATION<br>CONTROLLED     | 154      | 1591      |                  | ALL STEEL FAILS   |
| 27    | DGB  | C    | 127'  | DIESEL GEN. VAULT                   | 1    | VENTILATION<br>CONTROLLED     | 180      | 1481      |                  | ALL STEEL FAILS   |
| 28    | DGB  | C    | 127'  | FUEL TRANSFER RM                    | 1    | VENTILATION<br>CONTROLLED     | 180      | 2294      |                  | ALL STEEL FAILS   |
| 29    | RWB  | 2    | 88'   | REACTOR SUMP RM                     |      | NO STEEL                      |          |           |                  |                   |
| 30    | RWB  | 2    | 88'   | HPCI PUMP RM                        | 1    | VENTILATION<br>CONTROLLED     | 180      | 986       |                  |                   |
| 30    | RWB  | 2    | 88'   | HPCI PUMP RM                        | 2    | VENTILATION<br>CONTROLLED     | 77       | 1380      |                  | ALL STEEL FAILS   |
| 31    | RXB  | 3    | 92.5' | TORUS AREA                          | 1    | FUEL CONTROLLED               | 180      | 115       |                  |                   |
| 32    | RXB  | 3    | 91.5' | SW RHR PUMP & HX RM                 | 1    | VENTILATION<br>CONTROLLED     | 63       | 830       |                  |                   |
| 32    | RXB  | 3    | 91.5' | SW RHR PUMP & HX RM                 | 2    | VENTILATION<br>CONTROLLED     | 32       | 1093      |                  |                   |

PEACH BOTTOM STRUCTURAL STEEL SURVIVABILITY ANALYSIS

| PLC # | BLDG | UNIT | ELEV  | AREA DESC                     | CASE | CASE DESC              | FIRE DUR | FIRE TEMP | LOC. HTG. REMARKS | GEN. HTG. REMARKS                         |
|-------|------|------|-------|-------------------------------|------|------------------------|----------|-----------|-------------------|---|
| 32    | RXB  | 3    | 91.5' | SW RHR PUMP & HX RM           | 3    | VENTILATION CONTROLLED | 21       | 1277      |                   | GEN. HEATING > 1100<br>STEEL TEMP. ( 1100 |
| 33    | RXB  | 3    | 91.5' | NW RHR PUMP & HX RM           | 1    | VENTILATION CONTROLLED | 58       | 817       |                   |   |
| 33    | RXB  | 3    | 91.5' | NW RHR PUMP & HX RM           | 2    | VENTILATION CONTROLLED | 29       | 1070      |                   |   |
| 33    | RXB  | 3    | 91.5' | NW RHR PUMP & HX RM           | 3    | VENTILATION CONTROLLED | 18       | 1308      |                   | GEN. HEATING > 1100<br>STEEL TEMP. ( 1100 |
| 34    | RXB  | 3    | 91.5' | N. RHR PUMP & HX RM           | 1    | VENTILATION CONTROLLED | 56       | 851       |                   |   |
| 34    | RXB  | 3    | 91.5' | N. RHR PUMP & HX RM           | 2    | VENTILATION CONTROLLED | 24       | 1187      |                   | GEN. HEATING > 1100<br>STEEL TEMP. ( 1100 |
| 35    | RWB  | 3    | 88'   | HCPI PUMP RM                  | 1    | VENTILATION CONTROLLED | 180      | 977       |                   |   |
| 35    | RWB  | 3    | 88'   | HCPI PUMP RM                  | 2    | VENTILATION CONTROLLED | 130      | 1406      |                   | ALL STEEL FAILS                           |
| 36    | RWB  | 3    | 88'   | RCIC PUMP RM                  |      | NO STEEL               |          |           |                   |   |
| 37    | RWB  | 3    | 88'   | REACTOR SUMP RM               |      | NO STEEL               |          |           |                   |   |
| 38    | TB   | C    | 91.5' | CONDENSATE BACKWASH PUMP AREA | 1    | NO STEEL               |          |           |                   |   |
| 39    | TB   | 3    | 102'  | COND. DEMIN. PIPE TUNNEL      | 1    | NO STEEL               |          |           |                   |   |
| 40    | TB   | 3    | 102'  | PIPE TUNNEL                   | 1    | NO STEEL               |          |           |                   |   |
| 41    | RXB  | 3    | 116'  | S. VACUUM BREAKER RM          | 1    | FUEL CONTROLLED        | 99       | 514       | 1 CASE FAILS      |   |
| 42    | RXB  | 3    | 116'  | N. VACUUM BREAKER RM          | 1    | FUEL CONTROLLED        | 116      | 422       | 2 CASES FAIL      |   |
| 43    | TB   | 3    | 116'  | VALVE OPERATING AREA          | 1    | FUTURE ANALYSIS        |          |           |                   |   |
| 44    | TB   | 2    | 116'  | VALVE OPERATING AREA          | 1    | FUTURE ANALYSIS        |          |           |                   |   |
| 45    | RWB  | 2    | 91.5' | RHR PUMP & HX RM              |      | NO STEEL               |          |           |                   |   |
| 46    | RWB  | 2    | 116'  | COOLING WTR. EQUIP. RM        |      | NO STEEL               |          |           |                   |   |
| 47    | RXB  | 2    | 91.5' | SW RHR PUMP & HX RM           | 1    | VENTILATION CONTROLLED | 49       | 929       |                   |   |

## PEACH BOTTOM STRUCTURAL STEEL SURVIVABILITY ANALYSIS

| PLC # | BLDG | UNIT | ELEV  | AREA DESC                   | CASE | CASE DESC                 | FIRE DUR | FIRE TEMP | LOC. HTG. REMARKS | GEN. HTG. REMARKS                       |
|-------|------|------|-------|-----------------------------|------|---------------------------|----------|-----------|-------------------|---|
| 47    | RXB  | 2    | 91.5' | SW RHR PUMP<br>& HX RM      | 2    | VENTILATION<br>CONTROLLED | 28       | 1158      |                   | GEN. HEATING 11100<br>STEEL TEMP. 11100 |
| 47    | RXB  | 2    | 91.5' | SW RHR PUMP<br>& HX RM      | 3    | VENTILATION<br>CONTROLLED | 20       | 1342      |                   | W16X36 FAILS                            |
| 48    | TB   | 2    | 102'  | COND. DEMIN.<br>PIPE TUNNEL | 1    | NO STEEL                  |          |           |                   |   |
| 49    | TB   | 2    | 102'  | PIPE TUNNEL                 | 1    | NO STEEL                  |          |           |                   |   |
| 50    | TB   | 3    | 135'  | CORRIDOR                    | 1    | FUTURE ANALYSIS           |          |           |                   |   |
| 51    | TB   | C    | 135'  | SWGR RM<br>ACCESS CORRIDOR  | 1    | FUEL CONTROLLED           | 180      | 527       | 6 CASES FAIL      |   |
| 52    | TB   | 2    | 135'  | CORRIDOR                    | 1    | FUTURE ANALYSIS           |          |           |                   |   |
| 53    | RWB  | 3    | 135'  | MG SET RM                   | 1    | VENTILATION<br>CONTROLLED | 180      | 762       | 2 CASES FAIL      |   |
| 53    | RWB  | 3    | 135'  | MG SET RM                   | 2    | VENTILATION<br>CONTROLLED | 180      | 1272      | 2 CASES FAIL      | ALL STEEL FAILS                         |
| 54    | RWB  | C    | 135'  | RWD CONTROL ROOM            | 1    | FUEL CONTROLLED           | 180      | 2082      | 13 CASES FAIL     | ALL STEEL FAILS                         |
| 54    | RWB  | C    | 135'  | RWD CONTROL RM              | 2    | VENTILATION<br>CONTROLLED | 180      | 3032      | 13 CASES FAIL     | ALL STEEL FAILS                         |
| 55    | RXB  | 3    | 195'  | GEN FLR AREA<br>N. OF RX CL | 1    | FUEL CONTROLLED           | 180      | 162       |                   |   |
| 56    | RXB  | 3    | 195'  | GEN FL AREA<br>E. OF RX CL  | 1    | FUEL CONTROLLED           | 180      | 338       |                   |   |
| 57    | RXB  | 3    | 195'  | VENT. EQUIP. &<br>FRN RM    | 1    | FUEL CONTROLLED           | 180      | 480       | 3 CASES FAIL      |   |
| 58    | RXB  | 2    | 165'  | GEN FL AREA<br>N. OF RX CL  | 1    | FUEL CONTROLLED           | 180      | 885       |                   |   |
| 59    | RXB  | 2    | 135'  | GEN FL AREA<br>S. OF RX CL  | 1    | FUEL CONTROLLED           | 180      | 807       | 7 CASES FAIL      |   |
| 60    | RXB  | 3    | 165'  | GEN FL AREA<br>S. OF RX CL  | 1    | FUEL CONTROLLED           | 180      | 778       | 1 CASE FAILS      |   |
| 61    | RXB  | 3    | 165'  | GEN FL AREA<br>N. OF RX CL  | 1    | FUEL CONTROLLED           | 180      | 591       | 7 CASES FAIL      |   |
| 62    | RXB  | 3    | 135'  | GEN FL AREA<br>S. OF RX CL  | 1    | FUEL CONTROLLED           | 180      | 746       |                   |   |
| 63    | RXB  |      | 135'  | GEN FL AREA<br>N. OF RX CL  | 1    | FUEL CONTROLLED           | 180      | 715       | 15 CASES FAIL     |   |

## PEACH BOTTOM STRUCTURAL STEEL SURVIVABILITY ANALYSIS

| PLC # | SLDG | UNIT | ELEV | AREA DESC                         | CASE | CASE DESC       | FIRE DUR | FIRE TEMP | LOC. HTG. REMARKS | GEN. HTG. REMARKS |
|-------|------|------|------|-----------------------------------|------|-----------------|----------|-----------|-------------------|-------------------|
| 64    | RWB  | C    | 150' | SAMPLE TANK &<br>& PUMP AREA      | 1    | FUEL CONTROLLED | 174      | 472       | 5 CASES FAIL      |                   |
| 65    | RWB  | C    | 135' | RADWASTE<br>DRAINING AREA         | 1    | FUEL CONTROLLED | 180      | 434       | 8 CASES FAIL      |                   |
| 56    | RXB  | 3    | 165' | BACKWASH RECEIVING<br>& PUMP AREA |      | NO COMBUSTIBLES |          |           |                   |                   |
| 67    | RXB  | 3    | 165' | ISOLATION VALVE<br>COMPARTMENT    |      | NO COMBUSTIBLES |          |           |                   |                   |
| 68    | RXB  | 3    | 165' | REGENERATIVE HX RM                |      | NO STEEL        |          |           |                   |                   |
| 69    | RXB  | 3    | 135' | N. ISOLATION<br>VALVE COMPARTMENT |      | NO COMBUSTIBLES |          |           |                   |                   |
| 70    | RXB  | 3    | 135' | STEAM PIPE TUNNEL                 |      | NO STEEL        |          |           |                   |                   |
| 71    | RXB  | 3    | 135' | NEUTRON<br>MONITORING RM          |      | NO STEEL        |          |           |                   |                   |
| 72    | RXB  | 3    | 135' | S. ISOLATION<br>VALVE COMPARTMENT |      | NO COMBUSTIBLES |          |           |                   |                   |
| 73    | RXB  | 3    | 135' | DRYWELL ACCESS                    |      | NO COMBUSTIBLES |          |           |                   |                   |
| 74    | RXB  | 3    | 234' | REFUELING FL                      |      | NO COMBUSTIBLES |          |           |                   |                   |
| 75    | RXB  | 3    | 180' | N. VALVE<br>COMPARTMENT           |      | NO COMBUSTIBLES |          |           |                   |                   |
| 76    | RXB  | 3    | 180' | S. VALVE<br>COMPARTMENT           |      | NO COMBUSTIBLES |          |           |                   |                   |
| 77    | RXB  | 2    | 135' | S. ISOLATION<br>VALVE COMPARTMENT |      | NO STEEL        |          |           |                   |                   |
| 78    | RXB  | 2    | 135' | NEUTRON MONITORING<br>RM          |      | NO STEEL        |          |           |                   |                   |
| 79    | RXB  | 2    | 135' | STEAM PIPE TUNNEL                 |      | NO STEEL        |          |           |                   |                   |
| 80    | RXB  | 2    | 135' | DRYWELL ACCESS                    | 1    | FUEL C'NTROLLED | 27       | 266       |                   |                   |
| 81    | RXB  | 2    | 135' | N. ISOLATION<br>VALVE COMPARTMENT |      | NO COMBUS       |          |           |                   |                   |
| 82    | TB   | C    | 165' | CONTROL RM                        | 1    | FUEL CONTROLLED | 180      | 495       |                   |                   |
| 83    | ECT  | C    | 153' | SWGR RM                           | 1    | NO COMBUSTIBLES |          |           |                   |                   |
| 84    | RXB  | 2    | 165' | ISOL. VALVE COMPT.                |      | NO COMBUSTIBLES |          |           |                   |                   |
| 85    | RXB  | 2    | 165' | REGENERATIVE HX RM                |      | NO STEEL        |          |           |                   |                   |
| 86    | RXB  | 2    | 165' | BACKWASH REC. TANK                |      | NO COMBUSTIBLES |          |           |                   |                   |
| 87    | RXB  | 2    | 180' | N. VALVE<br>COMPARTMENT           |      | NO COMBUSTIBLES |          |           |                   |                   |

PEACH BOTTOM STRUCTURAL STEEL SURVIVABILITY ANALYSIS

| PLC # | BLDG | UNIT | ELEV  | AREA DESC                        | CASE | CASE DESC                 | FIRE DUR | FIRE TEMP | LOC. HTG. REMARKS | GEN. HTG. REMARKS |
|-------|------|------|-------|----------------------------------|------|---------------------------|----------|-----------|-------------------|-------------------|
| 88    | RXB  | 2    | 180'  | S. VALVE<br>COMPARTMENT          |      | NO COMBUSTIBLES           |          |           |                   |                   |
| 89    | RXB  | 2    | 234'  | REFUELING FL.                    |      | NO COMBUSTIBLES           |          |           |                   |                   |
| 90    | TB   | C    | 135'  | BATTERY ROOM<br>(TYPICAL)        | 1    | VENTILATION<br>CONTROLLED | 62       | 2646      |                   | ALL STEEL FAILS   |
| 91    | TB   | C    | 116'  | RADIATION CHEM LAB               | 1    | NO COMBUSTIBLES           |          |           |                   |                   |
| 92    | TB   | C    | 116'  | CONVENTIONAL<br>CHEM LAB         | 1    | NO COMBUSTIBLES           |          |           |                   |                   |
| 93    | TB   | C    | 116'  | HEALTH PHYSICS<br>UTILITY ROOM   | 1    | NO COMBUSTIBLES           |          |           |                   |                   |
| 94    | TB   | C    | 116'  | COUNTING ROOM                    | 1    | NO COMBUSTIBLES           |          |           |                   |                   |
| 95    | TB   | C    | 116'  | CLEAN CLOTHES ROOM               | 1    | NO COMBUSTIBLES           |          |           |                   |                   |
| 96    | TB   | C    | 116'  | TOILET AREA                      | 1    | NO COMBUSTIBLES           |          |           |                   |                   |
| 97    | TB   | C    | 116'  | JANITOR ROOM                     | 1    | NO COMBUSTIBLES           |          |           |                   |                   |
| 93    | TB   | 2    | 91.5' | CONDENSATE BACKWASH<br>TANK ROOM | 1    | NO STEEL                  |          |           |                   |                   |
| 99    | TB   | 3    | 91.5' | CONDENSATE BACKWASH<br>TANK ROOM | 1    | NO STEEL                  |          |           |                   |                   |