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U. S. Nuclear Regulatory Commission
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Braidwood Station, Units 1 and 2
Facility Operating License Nos. NPF-72 and NPF-77
NRC Docket Nos. STN 50-456 and STN 50-457

Byron Station, Units 1 and 2
Facility Operating License Nos. NPF-37 and NPF-66
NRC Docket Nos. STN 50-454 and STN 50-455

Subject: License Amendment Request to Change Fire Protection Program Requirements for Upper Cable Spreading Rooms

References:
1. Letter from R. A. Skokowski (NRC) to C. G. Pardee (Exelon Nuclear), "Braidwood Station, Units 1 and 2 NRC Integrated Inspection Report 05000456/2008004; 05000457/2008004," dated November 14, 2008
2. Letter from R. A. Skokowski (NRC) to C. G. Pardee (Exelon Nuclear), "Byron Station, Units 1 and 2 Integrated Inspection Report 05000454/2008-004; 05000455/2008-004," dated November 13, 2008

In accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," Exelon Generation Company, LLC (EGC) requests an amendment to Facility Operating License Nos. NPF-72 and NPF-77 for Braidwood Station, Units 1 and 2, and Facility Operating License Nos. NPF-37 and NPF-66 for Byron Station, Units 1 and 2. The proposed change requests NRC approval to implement a change to the Fire Protection Program (FPP).

The backup manually actuated carbon dioxide fire suppression systems in the upper cable spreading rooms at both stations have been removed from service. The systems were removed from service, without prior NRC approval, based on evaluations that concluded disabling the systems did not represent an adverse affect on the ability to achieve and maintain safe shutdown in the event of a fire. However, subsequent reviews have concluded that NRC approval should have been obtained prior to removing the systems from service, and References 1 and 2 document non-cited violations for Braidwood Station and Byron Station, respectively, regarding the evaluations. Specifically, prior NRC review is required since disabling the backup carbon dioxide systems results in a reduction of the fire protection

defense-in-depth element. This proposed license amendment requests NRC approval to revise the FPP to eliminate the requirement for the backup manual carbon dioxide fire suppression system in the upper cable spreading rooms. References 1 and 2 also describe the measures enacted pending final resolution of this issue.

The Attachment provides a description and evaluation of the proposed change. The proposed change has been reviewed by the Braidwood Station and Byron Station Plant Operations Review Committees and approved by the respective Nuclear Safety Review Boards in accordance with the requirements of the EGC Quality Assurance Program.

EGC requests approval of the proposed change by March 26, 2010. Once approved, the amendment will be implemented within 60 days. This implementation period will provide adequate time for the affected station documents to be revised using the appropriate change control mechanisms.

In accordance with 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b), EGC is notifying the State of Illinois of this application for license amendment by transmitting a copy of this letter and its attachments to the designated State Official.

There are no regulatory commitments contained in this letter. Should you have any questions concerning this letter, please contact Mr. Kenneth M. Nicely at (630) 657-2803.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 26th day of March 2009.

Respectfully,

Patrick R. Simpson
Manager – Licensing

Attachment: Evaluation of Proposed Change

cc: NRC Regional Administrator, Region III
NRC Senior Resident Inspector – Braidwood Station
NRC Senior Resident Inspector – Byron Station
Illinois Emergency Management Agency – Division of Nuclear Safety

ATTACHMENT
Evaluation of Proposed Change

1.0 SUMMARY DESCRIPTION

In accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," Exelon Generation Company, LLC (EGC) requests an amendment to Facility Operating License Nos. NPF-72 and NPF-77 for Braidwood Station, Units 1 and 2, and Facility Operating License Nos. NPF-37 and NPF-66 for Byron Station, Units 1 and 2. The proposed change requests NRC approval to implement a change to the Fire Protection Program (FPP). Specifically, the change to the FPP supports a plant modification to permanently abandon the backup manual carbon dioxide (CO_2) fire suppression system in the upper cable spreading rooms.

2.0 DETAILED DESCRIPTION

Each of the upper cable spreading rooms has an automatically actuated Halon fire suppression system that is designed and tested to provide sufficient Halon 1301 gas to suppress a surface or deep seated cable fire in any of the upper cable spreading rooms. Each of these upper cable spreading rooms is a separate fire area and has been designed and constructed with three-hour fire rated barriers. The original design of the fire suppression systems for the upper cable spreading rooms also included manual backup capabilities. The backup suppression capabilities included both (1) a manually initiated CO_2 suppression system, and (2) manual fire fighting capabilities that utilize hose stations and fire extinguishers dedicated to the upper cable spreading rooms.

The proposed change revises the FPP to eliminate the requirement to maintain the backup manual CO_2 fire suppression system in the upper cable spreading rooms at Braidwood Station and Byron Station. With the proposed change, fire suppression capability would continue to be maintained by the Halon gaseous suppression system, with manual backup fire fighting capabilities that utilize hose stations and fire extinguishers dedicated to the upper cable spreading rooms.

3.0 TECHNICAL EVALUATION

Background

The Braidwood Station and Byron Station designs include several cable spreading rooms that are designed such that redundant safe shutdown cabling is routed through separate rooms and isolated by three-hour fire barriers. The FPP was originally developed in accordance with NUREG-0800, Section 9.5.1, "Fire Protection Program," Revision 3 (i.e., Reference 1) and NRC fire protection guidance contained in Branch Technical Position (BTP) CMEB 9.5-1, "Guidelines for Fire Protection for Nuclear Power Plants" (i.e., Reference 2). Reference 2 states that the primary fire suppression in the cable spreading room should be an automatic water system such as closed-head sprinklers, open-head deluge system, or open directional water spray system.

During original plant licensing, installation of an automatic Halon 1301 fire suppression system with a manually initiated carbon dioxide backup fire suppression system were proposed, in lieu of an automatic water system, for each unit's upper cable spreading rooms. Use of an automatic Halon 1301 fire suppression system instead of water reduces the probability of a plant shutdown or equipment damage in the event of a spurious actuation. Section 9.5.1.5 of

Reference 3, which is also applicable to Braidwood Station as discussed in Reference 4, discusses that the proposed suppression systems do not meet the NRC's guidelines that the primary fire suppression system in cable spreading rooms must be a water system, and that the deviation from these guidelines has not been justified. The NRC's concern was that this design would not be sufficiently reliable to provide reasonable assurance that a potential fire in these areas would be suppressed.

In response to these concerns, information was submitted to the NRC in Reference 5 to propose measures that would enhance system reliability and effectiveness. The NRC's evaluation of this information was documented in Reference 6, which states in part:

> However, by letter dated June 17, 1983, the applicant proposed measures which, in the staff's opinion, would significantly enhance system reliability and effectiveness. Specifically, the applicant committed to electrically supervise all interior doors in the cable spreading rooms and to emphasize in the training of the fire brigade that the doors into these areas should remain closed. These measures along with the existing construction of the perimeter walls and floor/ceilings will provide the staff with reasonable assurance that extinguishing gas concentrations will be maintained. Also, additional detectors will be added to provide two separate detection circuits for the halon system and a second train of actuation logic will be added in parallel to the existing logic train. The existing Halon bottle discharge valve actuators will be replaced with a pair of pilot valves, each connected to one of the two trains of actuation logic, and either of which can actuate the Halon bottle discharge valve. An additional halon storage bottle has been provided to add redundance to the halon supply...
>
> ...The Pre-Fire Plan strategies have been modified to include the use of this additional backup capability, if required. These measures mitigate the concern that a single failure could render the halon and CO_2 systems inoperable. There was also a concern that during periodic maintenance in the cable spreading rooms, the gaseous fire suppression systems would be deactivated and could not readily be reactivated in the event of a fire. However, the design of the systems is such that if it becomes necessary to discharge carbon dioxide into the cable spreading rooms because of a fire, this can be accomplished manually without need of any special tool or device. The staff, therefore, concludes that because of the above referenced modifications, the separation of redundant shutdown divisions into separate cable spreading rooms and the existing fire protection for these rooms as detailed in the Fire Protection Report, the lack of a water-type fire suppression system is an acceptable deviation from Section C.7.c of BTP CMEB 9.5-1.

In 2002, EGC performed an evaluation to support isolation of the backup manual CO_2 fire suppression system to the upper cable spreading rooms at Byron Station, and the system was removed from service. An evaluation was also performed for Braidwood Station, and in 2007, the CO_2 fire suppression system to the upper cable spreading rooms at Braidwood Station was permanently mechanically isolated. The evaluations were performed in accordance with Reference 7 and operating license conditions regarding fire protection that allow changes to the approved fire protection program to be made without prior NRC approval if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire. The evaluations concluded, based in part on the fact that the manual CO_2 systems were not credited

in the post-fire safe shutdown analysis, that disabling the backup manual CO_2 fire suppression system to the upper cable spreading rooms did not represent an adverse affect on the ability to achieve and maintain safe shutdown in the event of a fire, and that prior NRC approval was not required.

However, subsequent reviews have concluded that NRC approval should have been obtained prior to removing the systems from service, and References 8 and 9 document non-cited violations for Braidwood Station and Byron Station, respectively, regarding the evaluations. Specifically, prior NRC review is required since disabling the backup CO_2 fire suppression systems results in a reduction of the fire protection defense-in-depth element. This proposed license amendment requests NRC approval to revise the FPP to eliminate the requirement for the backup manual CO_2 fire suppression system in the upper cable spreading rooms. References 8 and 9 also describe the measures enacted pending final resolution of this issue.

The information below demonstrates that the Halon 1301 gaseous suppression system is highly reliable and capable of suppressing postulated fires in the upper cable spreading rooms without compromising the ability to achieve and maintain safe shutdown in the event of a fire, thus meeting the intent of the guidelines in Reference 2 for fire suppression systems in cable spreading rooms.

Description of Halon 1301 Gaseous Suppression System

The upper cable spreading rooms are protected by an automatically actuated Halon 1301 gaseous suppression system. The systems are designed and have been tested to provide a six percent concentration and a minimum soak time of 20 minutes. The system is actuated automatically by signals from one detector in each of the two trains, which annunciate and alarm in the control room. Pre-discharge alarms are provided locally and in the control room. Pre-discharge timers delay the discharge to allow personnel time to leave the area. The Halon system can be initiated manually with or without electric power.

NUREG/CR-2607, "Fire Protection Research Program for the U. S. Nuclear Regulatory Commission 1975-1981," and NUREG/CR-3656, "Evaluation of Suppression Methods for Electrical Cable Fires" (i.e., References 10 and 11) discuss the effectiveness of various fire suppression systems. The testing included exposure cable tray fires and fully developed cable tray fires. The fully developed cable tray fires were intended to produce flaming and fully developed cable tray fires (i.e., deep-seated cable fires). One of the criteria for evaluating the results of the suppression system tests was the ability of the suppression system to suppress the fire with no re-ignition of the fire after oxygen was reintroduced into the test enclosure (i.e., soak time). Testing was performed on horizontal and vertical cable tray arrangements. The testing also evaluated the soak time necessary for IEEE-383 qualified cable and unqualified cable. The testing demonstrated that qualified cable requires a longer soak time than unqualified cable to ensure a deep-seated fire once suppressed does not reignite. Tests showed that Halon permanently extinguished an exposure fire after only a 10-minute soak time (Table 6), whereas the same time limit on simple oxygen deprivation was insufficient to keep the flame from returning upon ventilation. Table 9 in the report considered the 10-minute soak time demonstrated by testing and added a 50 percent safety factor concluding that a 15-minute soak time would adequately suppress both a flaming fire and a fully developed fire (i.e., deep-seated

fire), and that the fire would not reignite once oxygen was reintroduced into the protected room, although smoldering could possibly continue.

Table 9 from NUREG/CR-3656 is reproduced below.

Minimum Soak Times Required Using Halon 1301 Suppression Systems at 6 Percent Concentration for Fully Developed Cable Tray Fires		
Tray Configuration	Cable Type	
	IEEE-383 Qualified	Unqualified
Horizontal	15 minutes	10 minutes
Vertical	15 minutes	10 minutes

At the conclusion of the Halon 1301 system installation at Braidwood Station and Byron Station, testing was performed on each of the systems to ensure that the design Halon concentration could be achieved and that the design soak time could be maintained. Testing confirmed that the upper cable spreading room Halon systems could maintain the necessary six percent concentration for a soak time that exceeds the minimum soak times recommended in NUREG/CR-3656. As stated above, the Halon systems are designed and have been tested to provide a six percent concentration and a minimum soak time of 20 minutes. Therefore, the Halon 1301 systems are effective and capable of suppressing a deep-seated cable tray fire in these rooms. Routine preventive maintenance and surveillances are performed on the Halon system, and as a result system performance continues to be reliable.

The Fire Protection Report summarizes that the upper cable spreading area fire protection system design ensures that fire will not compromise plant safety and that use of automatic Halon systems instead of water reduces the probability of a plant shutdown or equipment damage in the event of a spurious actuation. Several enhancements to the Halon system were implemented in response to NRC concerns during original plant licensing to enhance system reliability and effectiveness. These enhancements included electrically supervising all interior doors in the cable spreading rooms, emphasizing in the training of the fire brigade that the doors into these areas should remain closed, adding detectors to provide two separate detection circuits for the Halon system, adding a second train of actuation logic in parallel to the first train, replacing Halon bottle discharge valve actuators with a pair of pilot valves (i.e., each connected to one of the two trains of actuation logic, and either of which can actuate the Halon bottle discharge valve), and adding an additional Halon storage bottle to add redundance to the supply. In the event of a fire in the upper cable spreading rooms, the automatic Halon system would suppress the fire, and smoldering that may remain would be adequately controlled using manual fire fighting capabilities as discussed below.

Manual Fire Fighting Capability

The original design of the fire suppression systems for the upper cable spreading rooms included a manual backup suppression method consisting of manual fire fighting capabilities that utilize hose stations and fire extinguishers dedicated to the upper cable spreading rooms. In the event of a fire in the upper cable spreading room, it may be necessary for the plant fire

brigade to manually fight the fire using this equipment. The fire brigade is adequately equipped and trained to manually fight a fire in any of the upper cable spreading rooms. This conclusion is based on brigade experience, walkdown of the upper cable spreading rooms, and actual fire scenarios in other plant areas with conditions similar to those present in the upper cable spreading rooms.

Ability to Achieve and Maintain Safe Shutdown

Each of the upper cable spreading rooms has been designed and constructed such that they are bounded on all sides, floor and ceiling by three-hour fire rated construction. The combustible loading analysis for each of these rooms has a maximum fire equivalent fire severity of less than two hours. Additionally, because the cables in these rooms are IEEE-383 qualified, a self-ignited fire is not postulated. A fire in qualified cable trays is difficult to start and spreads at a slow rate, providing ample time for an automatically actuated Halon system to suppress a fire in the early stages before the fire becomes fully developed.

Based on the multiple echelons of fire safety provided for the upper cable spreading rooms (i.e., three-hour fire barrier separation, automatic Halon 1301 suppression, hose stations, and fire extinguishers), the ability to achieve and maintain safe shutdown in the event of a fire is maintained with the removal of the manually actuated CO_2 system from the upper cable spreading rooms.

Section 2.3.3 of the Fire Protection Report discusses the design basis fire for the upper cable spreading rooms. The combustibles present in this area are primarily cable insulation and ductwork insulation. Ionization and thermal detectors for the room have been provided to sense a fire and alarm in the control room. In the event of a design basis fire, the fire would not spread out of the room because of the substantial construction of the walls, floor, and ceiling and penetrations and openings are sealed, except as noted in the fire barrier description within Section 2.3.3 of the Fire Protection Report.

In the unlikely event a fire did start, and the suppression systems failed to operate, the fire would be contained within the room by the fire barriers. However, the control room heating, ventilation, and air conditioning (HVAC) ductwork inside the room may be damaged and/or the fusible link fire dampers inside the ductwork or electrothermal link fire dampers would close and restrict the flow of air. The redundant train of the control room HVAC system could be started and supply air to the control room and surrounding areas except for the Unit 1 auxiliary electric equipment room, record storage room, and upper control room HVAC equipment room. If necessary, this room could be ventilated with temporary fans.

The design basis fire is highly unlikely for the following reasons.

a. The cable spreading rooms are controlled access areas.

b. No significant quantities of combustible materials are stored in the cable spreading rooms.

c. The cable insulation meets the IEEE-383 criteria for cable fire test. Additionally, the cables are separated by both division and function.

d. The room is provided with two trains of detectors that annunciate in the control room.

e. The fire suppression systems are available to quickly extinguish any fire.

In the event that a fire was to start in one of the cable trays, at least one smoke detector in the area would annunciate in the control room. If the fire continued to develop, the fire would actuate the heat detectors in the area. Once both a smoke detector and a heat detector have actuated, automatic actuation of the Halon fire suppression system and closing of the fire dampers would be initiated to suppress the fire. As discussed in Reference 11, an automatic Halon system is effective in extinguishing an exposure fire prior to developing into a full deep-seated cable tray fire. Nevertheless, if a fully-developed deep-seated cable tray fire is assumed, the existing Halon system provides assurance that the fire will be adequately suppressed.

The control room HVAC system will not be shut down, but will continue to operate and pressurize the control room and the zones surrounding the control room with one of the two HVAC trains in operation. The links of the fire dampers will close upon being energized by the control room fire detection system and/or temperatures exceeding 165°F. There are no radioactive sources in this zone.

The results of a fire in the upper cable spreading room would not impact the ability to achieve and maintain safe shutdown since only one engineered safety features division would be lost. Sufficient redundancy exists in the engineered safety features fed from the other division to achieve a reactor shutdown and to maintain the reactor in a safe shutdown condition.

Conclusion

As discussed above, the Halon 1301 gaseous suppression system is highly reliable and capable of suppressing postulated fires in the upper cable spreading rooms. The Halon system includes two separate detection circuits, and is automatically actuated by signals from two trains of actuation logic. The Halon bottle discharge valve actuators include a pair of pilot valves, each connected to one of the two trains of actuation logic, and either of which can actuate the Halon bottle discharge valves.

The upper cable spreading rooms are designed and constructed such that they are bounded on all sides, floor and ceiling by three-hour fire rated construction. The cables in these rooms are IEEE-383 qualified.

In the event of a fire in the upper cable spreading room, manual fire fighting capability using hose stations and fire extinguishers dedicated to the upper cable spreading rooms can be used as a backup to the Halon system.

Based on the multiple echelons of fire safety provided for the upper cable spreading rooms, the ability to achieve and maintain safe shutdown in the event of a fire is maintained with the removal of the manually actuated CO_2 system from the upper cable spreading rooms. The results of a fire in the upper cable spreading room would not impact the ability to achieve and maintain safe shutdown since only one engineered safety features division would be lost. Sufficient redundancy exists in the engineered safety features fed from the other division to

achieve a reactor shutdown and to maintain the reactor in a safe shutdown condition. Therefore, the proposed change is acceptable.

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

General Design Criterion (GDC) 3, "Fire protection," specifies, in part, that fire detection and fighting systems of appropriate capacity and capability shall be provided and designed to minimize the adverse effects of fires on structures, systems, and components important to safety. Section 3.1.2.1.3 of the Updated Final Safety Analysis Report concludes that Braidwood Station and Byron Station conform to the intent of GDC 3. Detailed information is provided in the Fire Protection Report regarding the bases for this conclusion. The proposed change does not impact the conclusion that Braidwood Station and Byron Station conform to the intent of GDC 3.

The FPP was originally developed in accordance with NUREG-0800, Section 9.5.1, "Fire Protection Program," Revision 3 (i.e., Reference 1) and NRC fire protection guidance contained in Branch Technical Position (BTP) CMEB 9.5-1, "Guidelines for Fire Protection for Nuclear Power Plants" (i.e., Reference 2). Reference 2 states that the primary fire suppression in the cable spreading room should be an automatic water system such as closed-head sprinklers, open-head deluge system, or open directional water spray system. However, during original plant licensing, the NRC determined that the lack of a water-type fire suppression system for the upper cable spreading rooms was an acceptable deviation from Section C.7.c of BTP CMEB 9.5-1. This was based on modifications to the Halon system, the separation of redundant shutdown divisions into separate cable spreading rooms, and the existing fire protection for these rooms as detailed in the Fire Protection Report. The proposed change removes the capability to use the backup manual CO_2 for the upper cable spreading rooms; however, the ability to achieve and maintain safe shutdown continues to be maintained. No changes to the Halon system or the backup manual fire fighting capabilities that utilize hose stations and fire extinguishers dedicated to the upper cable spreading rooms are proposed. In addition, a fire in the upper cable spreading room would only impact one engineered safety features division, and sufficient redundancy exists in the engineered safety features fed from the other division to achieve a reactor shutdown and to maintain the reactor in a safe shutdown condition. Therefore, the intent of the NRC-approved deviation from Section C.7.c of BTP CMEB 9.5-1 will continue to be met.

4.2 No Significant Hazards Consideration

In accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," Exelon Generation Company, LLC (EGC) requests an amendment to Facility Operating License Nos. NPF-72 and NPF-77 for Braidwood Station, Units 1 and 2, and Facility Operating License Nos. NPF-37 and NPF-66 for Byron Station, Units 1 and 2. The proposed change requests NRC approval to implement a change to the Fire Protection Program (FPP). Specifically, the change to the FPP supports a plant modification to permanently abandon the backup manual carbon dioxide (CO_2) fire suppression system in the upper cable spreading rooms.

According to 10 CFR 50.92, "Issuance of amendment," paragraph (c), a proposed amendment to an operating license involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not:

(1) Involve a significant increase in the probability or consequences of any accident previously evaluated; or

(2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or

(3) Involve a significant reduction in a margin of safety.

EGC has evaluated the proposed change, using the criteria in 10 CFR 50.92, and has determined that the proposed change does not involve a significant hazards consideration. The following information is provided to support a finding of no significant hazards consideration.

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No

   The proposed change revises the FPP to eliminate the requirement to maintain the backup CO_2 fire suppression system for the upper cable spreading rooms. With the exception of the CO_2 fire suppression system itself, the proposed change does not result in any physical changes to safety related structures, systems, or components, or the manner in which they are operated, maintained, modified, tested, or inspected. The proposed change does not degrade the performance or increase the challenges of any safety related SSCs assumed to function in the accident analysis. The proposed change does not change the probability of a fire occurring since the fire ignition frequency is independent of the method of fire suppression. The proposed change does not affect the consequences of an accident previously evaluated since the fire safe shutdown analysis assumes fire damage throughout the affected fire area. The results of a fire in the upper cable spreading room would only affect one engineered safety features division. Sufficient redundancy exists in the engineered safety features fed from the other division to achieve a reactor shutdown and to maintain the reactor in a safe shutdown condition.

   Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

   Response: No

   The proposed change revises the FPP to eliminate the requirement to maintain the backup CO_2 fire suppression system for the upper cable spreading rooms. With the exception of the CO_2 fire suppression system itself, the proposed change does not result in any physical changes to safety related structures, systems, or components, or the manner in which they are operated, maintained, modified, tested, or inspected. The proposed change does not degrade the performance or increase the challenges of any safety related SSCs assumed to function in the accident analysis. As a result, the proposed change does not introduce nor increase the number of failure mechanisms of a new or different type than those previously evaluated. The fire safe shutdown analysis assumes fire damage throughout the area consistent with a complete lack of fire suppression capability. Potential habitability hazards associated with actuation of the CO_2 system are eliminated with the proposed change.

   Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

   Response: No

   The proposed change revises the FPP to eliminate the requirement to maintain the backup CO_2 fire suppression system for the upper cable spreading rooms. With the exception of the CO_2 fire suppression system itself, the proposed change does not result in any physical changes to safety related structures, systems, or components, or the manner in which they are operated, maintained, modified, tested, or inspected. The proposed change does not degrade the performance or increase the challenges of any safety related SSCs assumed to function in the accident analysis. Since the backup manual CO_2 fire suppression system is not credited in the safe shutdown analysis to protect the upper cable spreading rooms, the proposed change does not impact plant safety since the conclusions of the fire safe shutdown analysis remain unchanged.

   Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above evaluation, EGC concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92, paragraph (c), and accordingly, a finding of no significant hazards consideration is justified.

4.3 Conclusions

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or the health and safety of the public.

5.0 ENVIRONMENTAL CONSIDERATION

EGC has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, "Standards for Protection Against Radiation." However, the proposed amendment does not involve: (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22, "Criterion for categorical exclusion; identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not requiring environmental review," paragraph (c)(9). Therefore, pursuant to 10 CFR 51.22, paragraph (b), no environmental impact statement or environmental assessment needs to be prepared in connection with the proposed amendment.

6.0 REFERENCES

1. NUREG-0800, Section 9.5.1, "Fire Protection Program," Revision 3, dated July 1981

2. Branch Technical Position CMEB 9.5-1, "Guidelines for Fire Protection for Nuclear Power Plants," Revision 2, dated July 1981

3. NUREG-0876, "Safety Evaluation Report Related to the Operation of Byron Station, Units 1 and 2," dated February 1982

4. NUREG-1002, "Safety Evaluation Report Related to the Operation of Braidwood Station, Units 1 and 2," dated November 1983

5. Letter from T. R. Tramm (Commonwealth Edison) to NRC, "Fire Protection," dated June 17, 1983

6. NUREG-0876, Supplement No. 5, "Safety Evaluation Report Related to the Operation of Byron Station, Units 1 and 2," dated October 1984

7. NRC Generic Letter 86-10, "Implementation of Fire Protection Requirements," dated April 24, 1986

8. Letter from R. A. Skokowski (NRC) to C. G. Pardee (Exelon Nuclear), "Braidwood Station, Units 1 and 2 NRC Integrated Inspection Report 05000456/2008004; 05000457/2008004," dated November 14, 2008

9. Letter from R. A. Skokowski (NRC) to C. G. Pardee (Exelon Nuclear), "Byron Station, Units 1 and 2 Integrated Inspection Report 05000454/2008-004; 05000455/2008-004," dated November 13, 2008

10. NUREG/CR-2607, "Fire Protection Research Program for the U. S. Nuclear Regulatory Commission 1975-1981," dated April 1983

11. NUREG/CR-3656, "Evaluation of Suppression Methods for Electrical Cable Fires," dated October 1986