

Attachment 2
Redacted Version of
Exemption Request for the H. B. Robinson Steam Electric Plant, Unit No. 2

H.B. Robinson Steam Electric Plant, Unit No. 2

Docket No. 50-261 / License No. DPR-23

Request for Exemption from a Specific Provision in 10 CFR 73.55

A. Background

The NRC issued a Final Rule for revised security requirements in the Federal Register dated March 27, 2009. Pursuant to 10 CFR 73.55(a)(1) of the Final Rule, the revised security requirements in 10 CFR 73.55 were to be implemented by March 31, 2010. Carolina Power & Light Company (CP&L), now doing business as Progress Energy Carolinas, Inc., completed an extensive evaluation of these new requirements. This evaluation included a new comprehensive blast analysis for each of Progress Energy's four nuclear sites. The comprehensive blast analysis included consideration of equipment necessary to maintain the four required alarm station functions, consideration of explosives as allowed by the Design Basis Threat (DBT), and research of construction records to determine exact wall construction. Additionally, as resolutions to identified vulnerabilities were evaluated, CP&L's internal adversary team was consulted to assure that thorough resolutions were selected.

As a result of the extensive evaluation, CP&L determined that the H.B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, site would be in compliance with the vast majority of the requirements in the Final Rule within the brief implementation period. Significant efforts were and are being expended to comply with the revised rule requirements in the Final Rule. These efforts included: implementation of the new safety/security interface requirements, revising and implementing the Training and Qualification Plan in accordance with the new requirements, revising and implementing the new increased drill and exercise requirements, and resolving the major logistical challenges involved with the increased number of drills and exercises involving the adversary team and Multiple Integrated Laser Engagement System (MILES) gear. To address some of the logistical challenges, Progress Energy centrally controls the MILES gear and has voluntarily adopted the Department of Energy standards for issuance of the MILES gear for drills and exercises.

However, CP&L previously determined that implementation of two specific parts of the revised requirements would require additional time because they involve significant physical upgrades to the HBRSEP, Unit No. 2, security system. These changes are significant physical modifications that will benefit the HBRSEP, Unit No. 2, defensive strategy beyond the minimum requirements necessary to meet the new security requirements. Primarily,

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Upon review of the Final Rule, CP&L identified two projects necessary to achieve

compliance with the Final Rule. These projects were:

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The projects listed above, are a series of significant modifications which, once completed, will provide a robust defensive posture beyond that which would be achieved through minimum compliance with the regulation.

Compliance with the above listed rule provisions was the subject of the November 30, 2009, (Reference 1) exemption request which was approved by the NRC on March 3, 2010, (Reference 2). CP&L has determined that additional time, beyond that previously approved by the NRC in Reference 2, will be required to achieve compliance with one of the two items. Compliance with { } has been delayed due to the complexity of the work, the complexity of the design and associated analysis; and the increased scope of underground duct banks and buried conduit that must be constructed.

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See Table 1 below for project milestone schedules.

B. Proposed Exemption

CP&L requests an exemption, from the implementation date only, for the item listed below. CP&L will maintain the current HBRSEP, Unit No. 2, site protective strategy in accordance with the current Physical Security Plan. The current HBRSEP, Unit No. 2, site protective strategy has been approved by the NRC staff as providing high assurance for the protection of the facility and public from the effects of radiological sabotage. Accordingly, the requested exemption to defer compliance with one provision of 10 CFR 73.55 until September 16, 2011, *“will not endanger life or property or the common defense and security, and are otherwise in the public interest.”*

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C. Basis for Exemption

CP&L is seeking an exemption from the previously approved December 30, 2010, compliance date to September 16, 2011, for one provision listed in 10 CFR 73.55 as discussed in Section B. HBRSEP, Unit No. 2, management has approved the plan to perform the modifications necessary to achieve full compliance with the provision. This plan has been aggressively pursued, with significant effort expended in order to meet the 2010 date previously approved; however, a number of issues have significantly hampered the ability to move forward with the plan as described in Reference 1. These issues will be discussed in detail below.

The following issues have delayed the work to this point, and/or impacted the projected schedule: the complexity of the design and construction of the projects which lead to unforeseen scope growth; a better understanding of the time necessary for transition and testing for the new systems; and due to a fire in an electrical switchgear room, the spring refueling outage was extended beyond that originally anticipated when schedules were first developed. These issues were revealed as the design evolved from the conceptual state to a point where discovery is now 90 percent complete.

Project Overview

The work necessary to achieve full compliance includes several significant plant modifications. A summary of the physical modifications required includes:

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A schedule for these projects is summarized in Table 1 which shows critical milestones.

It is essential to work these projects together because:

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These plant modifications are significant in scope involving the construction of new facilities, extensive design and procurement efforts, and work with high voltage cabling and the personnel safety risk associated with such work. These modifications warranted thorough review of the safety security interface and had to be coordinated with the Spring 2010 refueling outage. All of these efforts require careful design, planning, procurement, and implementation efforts as discussed below.

The design work is approximately 65 percent complete at this point. Although the majority of the designs are not 100 percent complete, they have progressed to the point where discovery is now 90 percent complete. CP&L has been working very closely with the engineering vendor preparing the detailed design packages for these projects, and has called upon industry experts for third party reviews for certain aspects to ensure a quality design meeting all regulations.

Construction inside the PA had to be carefully planned and controlled to minimize impacts

on plant operations and refueling outage activities. Minimal construction activities spanned the extended Spring 2010 refueling outage resulting in additional logistical challenges involving personnel and material movements in and around the PA.

HBRSEP, Unit No. 2, shut down on Sunday March 28, 2010, following a fire in an electrical switchgear room. Due to significant fire related damage, the planned refueling outage was started three weeks early. The refueling outage extended from a scheduled 35 days to 113 days due to the additional activities required to recover from the March 28th event. The Part 73 compliance project plan called for stopping all project work, with the exception of { }, during the outage to ensure that safety and the outage were not impacted by project activities, such as closing roads and relocating outage equipment for excavation of duct banks.

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The March 28th event and the decision to start the refueling outage three weeks early caused limited availability of project construction and engineering resources during this period. Construction of underground duct banks and manholes was substantially delayed due to unavailability of work areas because of outage activities. This resulted in not completing some scheduled pre-outage activities. Much of the site and project engineering resources were reassigned to event recovery and the refueling outage earlier than planned, which caused delays in the processing of Engineering Change (EC) packages. This had a ripple effect throughout the project schedule causing construction activities to slip by approximately five weeks. { }

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Extending the unit outage prevented some of the Part 73 Project activities from being worked as scheduled. The outage was completed on July 19, 2010. This eight week extension resulted in a five week delay in beginning excavation of duct banks / manholes and their subsequent installation, due to lack of available resources and/or outage equipment in the way of project work areas. The outage extension also resulted in EC design review milestones to be delayed 2 months due to unavailability of site engineering resources.

{

}

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Due to space limitations inside the PA and the need to construct the { } during the Spring 2010 refueling outage, the location { } was selected to minimize interferences with the refueling outage. The location selected was occupied by a { } were removed from the site in mid-January and construction personnel removed the last portions of the concrete sections from the site in mid-March. This allowed personnel to lay out the { }

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the required codes and standards. After review of the vendor's calculation and blast certification, additional blast and structural analyses were required to verify the performance of the structures. The design products required several rounds of comments and resolution between the engineering firm preparing the required change documents and the { } vendor's engineers. The number of iterations was unforeseen and caused delays { }

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CP&L expected the { } vendor to have an engineering capability that would support the practices common to nuclear utility design efforts; but, the { } vendor was not prepared for the level of review and oversight that was required and provided for nuclear projects by CP&L. The engineering vendor responsible to design the equipment { } was tasked to prepare the designs { } The effort was complicated because the { } design was outside of the engineering vendor's scope. The iterative process created by vendors working together was much more significant and lengthy than expected due to the complexity of the designs resulting in further delays.

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The { } have been fabricated at the vendor's facility. A Progress Energy team inspected the vendor's fabrication facility on July 22, 2010, and found several items that were not built to requirements which had to be corrected. Additionally, the { }

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As a result of the issues discussed above, { } completion has slipped from mid-September 2010 to early March 2011.

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A large number of cables must be routed to { } Therefore, new underground duct bank

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sections must be installed to connect security equipment to { } As (d)(1)
the design progressed from the conceptual stage, the full complexity of the project was realized and the need for additional cabling with identified.

The original schedule called for an evaluation of existing duct banks for routing cables to and from { }. Locating available conduits to pull new cable back to the { } became an issue. Approximately 32 security pull boxes and manholes were inspected around the site for spare conduits. Pairs of manholes were opened, spare or unused conduits were identified and evaluated for use, and abandoned cables were identified and removed to free up conduits. As the existing duct banks were examined, many more than expected were found to be too full for use. Additionally, as duct bank construction progressed, unexpected underground obstructions were found that required duct bank routes to be revised. Therefore, new duct banks and routings had to be designed and constructed that were not originally planned. (d)(1)

The initial design called for 16 duct banks (approximately 2100 linear feet) and 11 manholes. The current design now calls for 22 duct banks (approximately 3185 linear feet) and 14 manholes, and approximately 3000 linear feet of direct buried conduit, a significant scope increase. Approximately 1515 linear feet of duct banks and ten manholes have been installed through the end of August 2010. Refer to Figure 3 for pictures of recent duct bank construction.

During installation of duct banks / manholes in the heavy haul road it was determined that the manholes specified in the design would not be able to withstand the crane weight. Redesign and fabrication of the new heavy haul manholes caused a four week slip in the construction schedule. The heavy haul road is the only road that can be used by the equipment hatch crane to enter the radiological control area and remove the containment building equipment hatch / shielding to support a unit refueling outage.

Duct bank construction is only approximately 50 percent complete at this time. It is not expected that the duct banks will be completed at the time the { } arrives onsite. As stated above, excavation and trenching in the PA is a slow process that must be carefully planned and executed to assure personnel and nuclear safety. (d)(1)

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CP&L believes those security facilities that are in or near the interior areas of the PA are the most effective throughout the range of contingencies for which we must prepare.

{

} will ensure that HBRSEP, Unit No. 2, is compliant with the single act requirements, and also position security resources in an area well protected from a variety of other threats. The new facility will also be available for future plans { } to further improve HBRSEP, Unit No. 2's, protective strategy.

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See Table 1 below for project milestone schedules.

Summary

As indicated above, CP&L is expending a great deal of effort in the design and planning phases of these projects to ensure a sound safety-security interface.

- Operating experience from the implementation of previous security orders, at Progress Energy facilities as well as in the industry, has shown that decisions made within a compressed schedule to meet an aggressive deadline may create unintended consequences that have long-term adverse impacts on the site.
- Additional time will provide for optimum planning and execution to better assure personnel industrial safety and a sound safety-security interface throughout the project.

These modifications will provide several long term security benefits for HBRSEP, Unit No. 2.

- A central location within the PA for { } will improve the defensive position of these assets and ensure protection from single act vulnerabilities. (d)(1)
- A central location within the PA for { } will greatly enhance the defensive posture of the station from threats beyond that which is required for the single act. (d)(1)

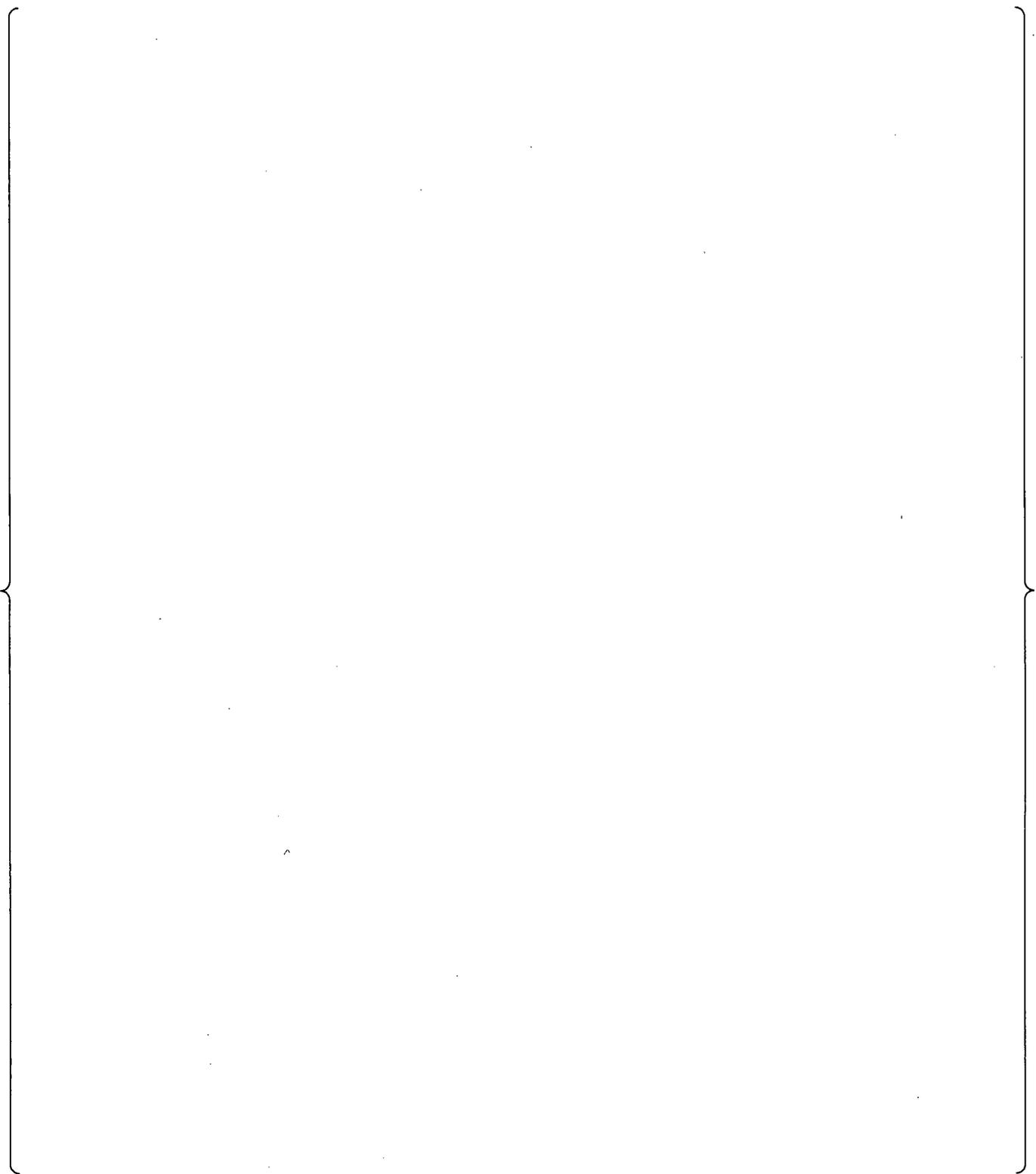
CP&L believes that the additional time necessary to complete this project is warranted based on the strengthened security posture that will be achieved through the implementation of these projects.

CP&L believes that the significant scope of the modifications and the time necessary to safely construct and test the modifications justify additional time beyond the previously approved compliance date. Therefore, CP&L believes that our actions are in the best interest of protecting public health and safety through the security changes that will be instituted.

D. Temporary Compliance Measures Considered in Lieu of a Second Exemption

CP&L considered other options for achieving temporary compliance with the one provision of the Final Rule by the previously approved compliance date before seeking this exemption. Options considered are discussed below. However, for the reasons provided below, these temporary compliance measures were rejected.

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E. Environmental Assessment

Carolina Power & Light Company (CP&L), now doing business as Progress Energy Carolinas, Inc., is requesting an exemption for H.B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, in accordance with 10 CFR 73.5, "Specific exemptions." The requested exemptions would defer the compliance date from March 31, 2010, as specified in 10 CFR 73.55(a)(1), to September 16, 2011, for one provision of 10 CFR 73.55. The proposed action is needed to allow additional time for the design and installation of security modifications that are expected to provide long term benefits in security posture and capabilities. In lieu of full compliance with the provision of 10 CFR 73.55, as revised on March 27, 2009, CP&L will maintain the current HBRSEP, Unit No. 2, site protective strategy in accordance with the current Physical Security Plan. The current HBRSEP, Unit No. 2, site protective strategy has been approved by the NRC staff as providing a high assurance for the protection of the facility and public from the effects of radiological sabotage.

Deferral of compliance from March 31, 2010, to September 16, 2011, for the provision of 10 CFR 73.55 is a compliance date change only and, therefore, does not result in any physical changes to structures, systems, and components (SSCs) or land use at HBRSEP, Unit No. 2. Therefore, the deferral of the compliance date does not involve:

- any change to the types, characteristics, or quantities of non-radiological effluents discharged to the environment.
- any changes to liquid radioactive effluents discharged to the environment.
- any changes to gaseous radioactive effluents discharged to the environment.
- any change in the type or quantity of solid radioactive waste generated.
- any change in occupational dose under normal or Design Basis Accident (DBA) conditions.
- any change in the public dose under normal or DBA accident conditions.
- any land disturbance.

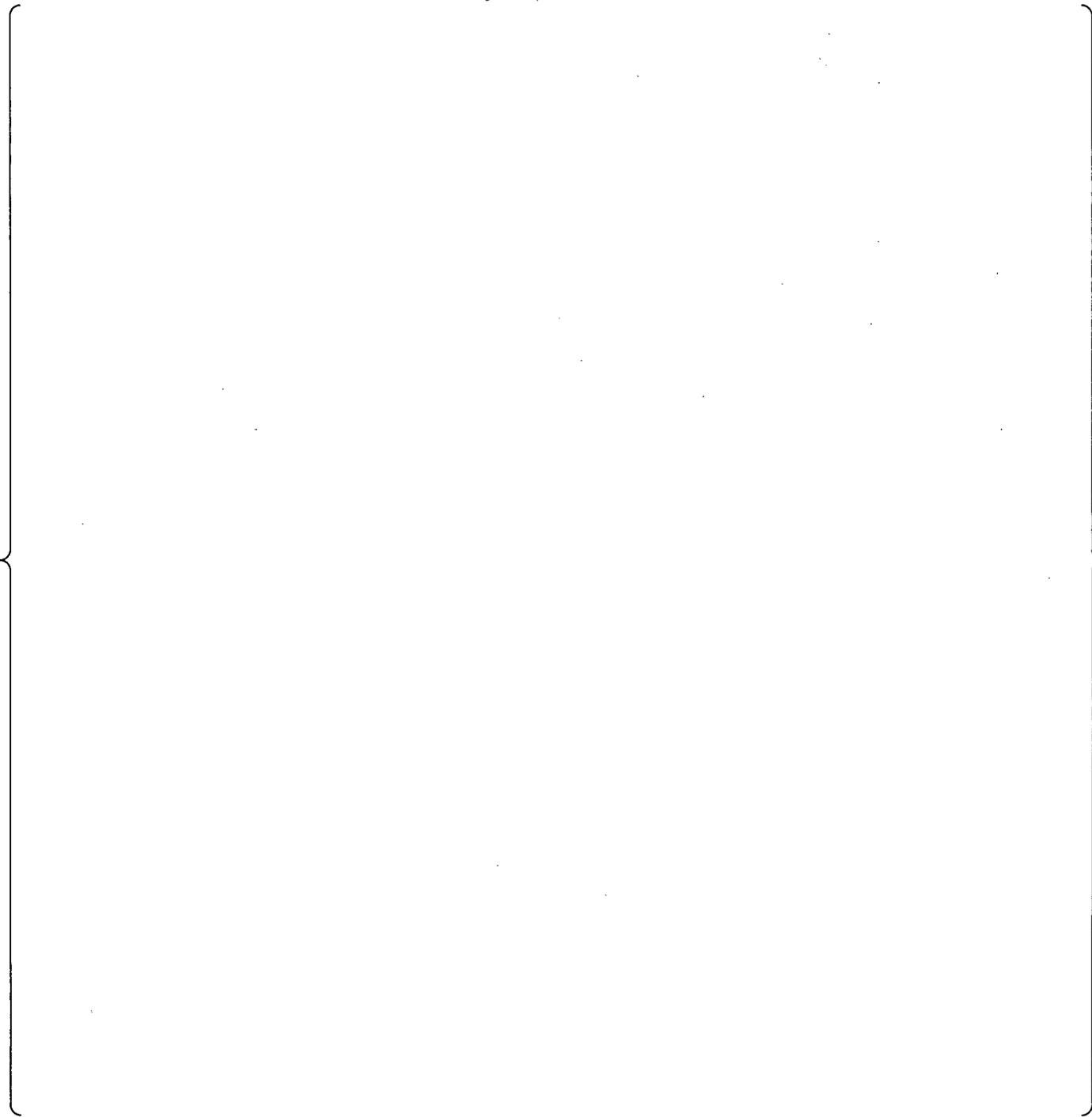
Conclusion

There is no significant radiological environmental impact associated with the proposed exemption. The proposed exemption will not affect any historical sites nor will it affect non-radiological plant effluents.

F. References:

1. Progress Energy letter from R. J. Duncan II to the Nuclear Regulatory Commission Document Control Desk titled, *Request for Exemptions from Physical Security Requirements,*” dated November 30, 2009
2. Nuclear Regulatory Commission letter from Tracy J. Orf to Eric McCartney titled, H. B. Robinson Steam Electric Plant, Unit No. 2 – *Exemption From the Requirements of 10 CFR Part 73, Section 73.55 (TAC No. ME2816)*, dated March 3, 2010

Table 1: Project Schedule Milestones *



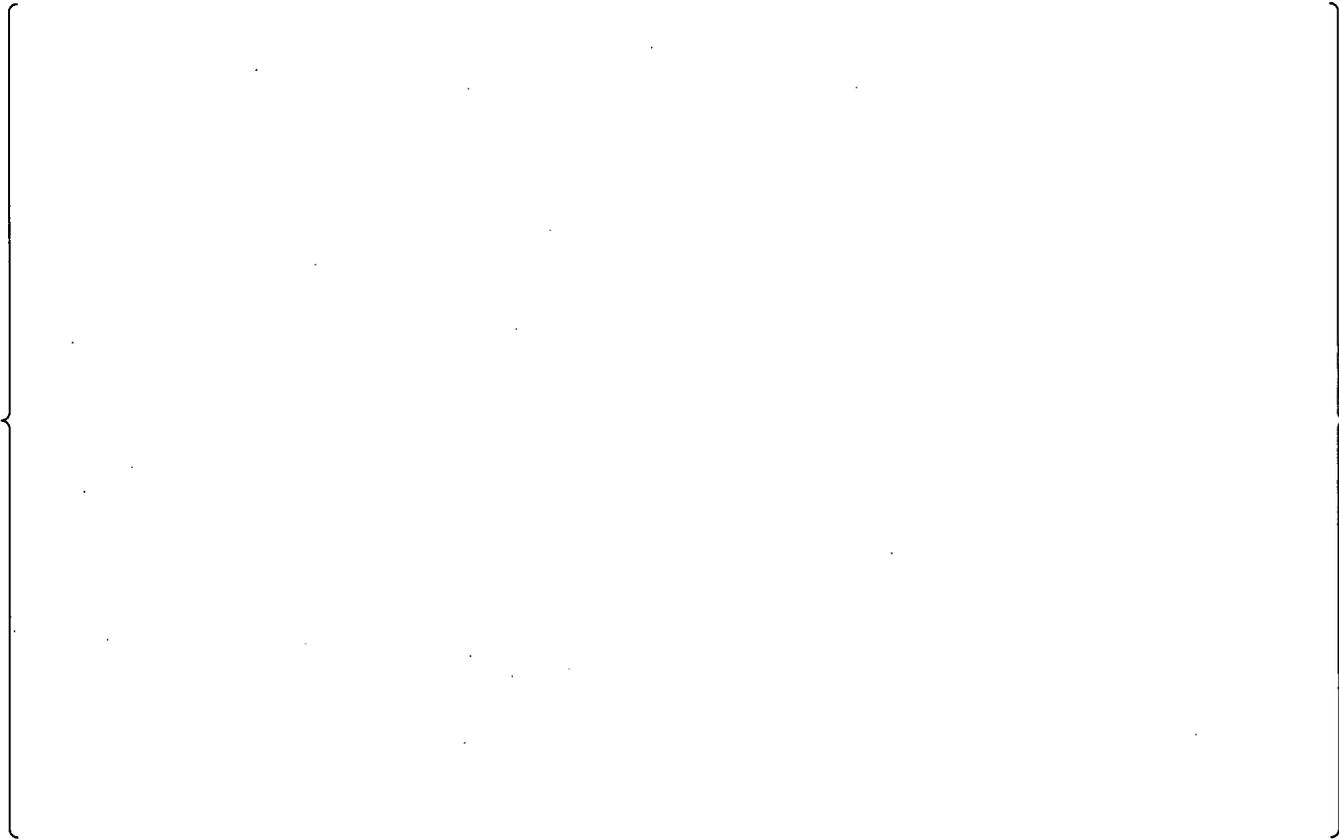
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* The dates and sequences provided in this milestone schedule are best estimates based on information available at the time the schedule was developed and may change as designs are finalized and construction proceeds. Therefore, these dates and sequences are not considered to be regulatory commitments.

Figure 1: Design of {

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Figure 2: Location of {

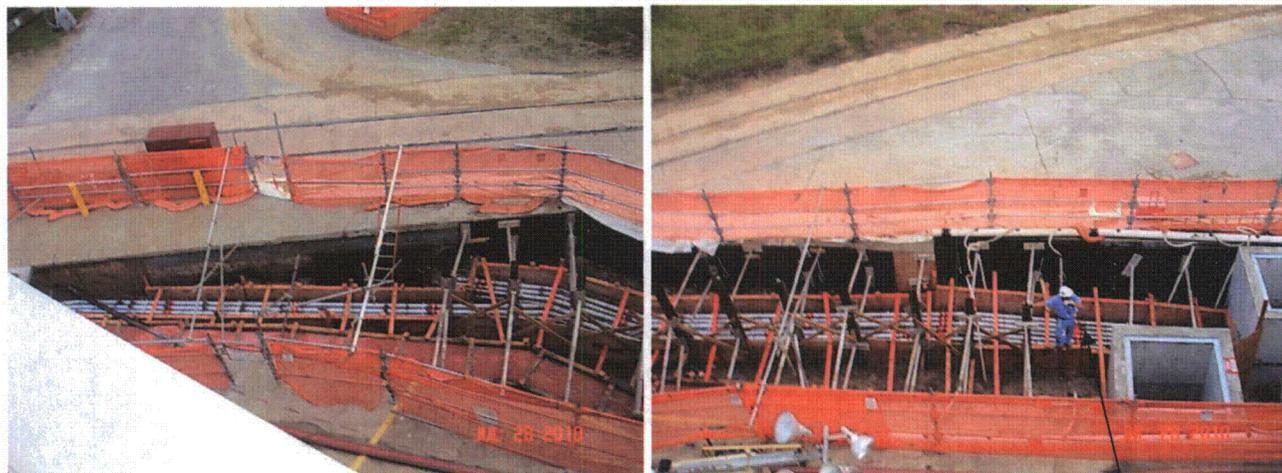
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Figure 3: Recent Duct Bank Construction



Major East - West Duct Bank Under Construction

Worker



One Set of Manholes in Previously Completed Duct Bank