LACROSSE*SOLUTIONS*

June 27, 2016 LC-2016-0022

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

La Crosse Boiling Water Reactor
Facility Operating License No. DPR-45
NRC Docket Nos. 50-409 and 72-046

Subject: License Amendment Request for the License Termination Plan

References:

1) Barbara A. Nick, President and CEO, Dairyland Power Cooperative, Letter to U.S. Nuclear Regulatory Commission, "Application for Order Approving License Transfer and Conforming Administrative License Amendments," dated October 8, 2015
2) Marlayna Vaaler, U.S. Nuclear Regulatory Commission, Letter to Barbara Nick, Dairyland Power Cooperative, "Order Approving Transfer of License for the La Crosse Boiling Water Reactor from the Dairyland Power Cooperative to LaCrosseSolutions, LLC and Conforming Administrative License Amendment," dated May 20, 2016

The La Crosse Boiling Water Reactor facility (LACBWR) is owned by Dairyland Power Cooperative (Dairyland). Dairyland purchased LACBWR in July 1973. LACBWR was shut down on April 30, 1987. All spent nuclear fuel elements from LACBWR have been transferred from the Fuel Element Storage Well to dry cask storage at the on-site Independent Spent Fuel Storage Installation (ISFSI) as of September 19, 2012. The remaining LACBWR unit, and its associated buildings and structures are ready for dismantlement and decommissioning activities.

As documented in Reference 1, Dairyland and LaCrosse*Solutions,* LLC (Solutions) submitted an application requesting that the U.S. Nuclear Regulatory Commission (NRC) consent to the transfer of Dairyland's Possession Only License No. DPR-45 for the LACBWR to Solutions. The Applicants requested that the NRC consent to the transfer of Dairyland's licensed possession, maintenance and decommissioning authorities to Solutions so as to implement expedited decommissioning at the LACBWR Site. The License transfer was approved on May 20, 2016 as documented in Reference 2. SAFSTOR was utilized prior to license transfer as the decommissioning approach since the permanent shutdown and defueling of LACBWR, with limited decontamination and dismantlement for the LACBWR facility. The new plan is to shift to active decommissioning (DECON), accelerate the decommissioning schedule, and begin decommissioning at this time. Decommissioning is scheduled to be completed by the end of 2018 excluding the ISFSI facility. Dairyland will continue to operate the Genoa 3 coal-fired generating facility located at the site.

NMSS01
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With the approval of the license transfer, Solutions has assumed responsibility for all licensed activities at the LACBWR Site, including responsibility under the license to complete decommissioning. As such, post license transfer regulatory correspondence will be with the new licensee, Solutions.

The LACBWR facility does not maintain a Safety Analysis Report (SAR). Dairyland's SAFSTOR Decommissioning Plan (D-Plan) was approved on August 7, 1991 via a NRC issued Decommissioning Order. The Decommissioning Order was modified September 15, 1994, by Confirmatory Order to allow Dairyland to make changes in the facility or procedures as described in the D-Plan, and to conduct tests or experiments not described in the D-Plan, without prior NRC approval, if a plant-specific safety and environmental review procedure containing similar requirements as specified in 10 CFR 50.59 was applied. The NRC withdrew the September 15, 1995 Confirmatory Order in a letter dated March 31, 2016 based on the their determination that staffing requirements imposed by the order are now included in the LACBWR Quality Assurance Program Description (QAPD) and Post-Shutdown Decommissioning Activities Report (PSDAR) and changes to these documents are adequately controlled by 10 CFR 50.54(a), 10 CFR 50.59, and 10 CFR 50.82. The D-Plan includes the PSDAR. The joint document is titled, LACBWR Decommissioning Plan and Post-Shutdown Decommissioning Activities Report (D-Plan/PSDAR). Thus, for the purpose of this submittal, the LACBWR D-Plan/PSDAR is considered the equivalent of a SAR.

Pursuant to 10 CFR 50.90, Solutions proposes to amend its Possession Only License, DPR-45, by adding a license condition to reflect the approval of the LACBWR License Termination Plan (LTP). The proposed change provides the criteria by which the need for NRC approval of changes to the LTP is determined. The license termination plan is to be a supplement to the plant's UFSAR or an equivalent document (D-Plan/PSDAR) and is required to be submitted at least two years before the date of license termination. The proposed license change provided in this attachment is submitted to satisfy the requirements of 10 CFR 50.82(a)(10) for approval of the License Termination Plan (LTP) by license amendment. Solutions is not, at this time, submitting its application for termination of license.

Portions of this submittal provide the NRC with financial information to aid in the review of the LACBWR License Termination Plan (LTP). Solutions considers this proprietary financial information to be confidential and requests NRC to withhold it from public disclosure under 10 CFR 2.390(a)(4).

This submittal contains a Solutions Proprietary Financial Information Affidavit pursuant to 10 CFR 2.390. The Affidavit sets forth the basis for which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in 10 CFR 2.390(b)(4). All documents within the scope of this affidavit are marked as "withhold from public disclosure under 10 CFR 2.390."

Attachment 1 provides a discussion of the proposed change, technical analysis, regulatory analysis, and environmental impact consideration. Attachment 2 provides the proposed amended LACBWR Possession Only License. Attachment 3 provides the LACBWR LTP for NRC review and approval. Chapter 7 of the LTP contains the proprietary financial information

Solutions is providing to the NRC and seeks to have withheld from public disclosure in its entirety. Attachment 4 of this submittal contains a redacted version of LACBWR LTP Chapter 7 for public disclosure. Supporting reference documentation is provided in Attachment 5. Select reference material is unavailable at this time and will be provided in a subsequent transmittal. Attachment 6 contains a preflight report for the documentation provided on Computer Disk (CD). In accordance with 10 CFR 50.82(a)(9)(i), the LACBWR LTP is being submitted as a supplement to the SAR equivalent D-Plan/PSDAR, and will be maintained accordingly upon approval.

The proposed change does not impact the public health and safety and does not involve a Significant Hazards Consideration (SHC) pursuant to the provisions of 10 CFR 50.92 (see SHC provided in Section 4.1 of Attachment 1). In addition, the proposed change has been reviewed in consideration of 10 CFR 51.22; and it has been determined that the proposed change meets the criteria for a categorical exclusion from requiring an environmental impact statement.

In accordance with 10 CFR 50.91 (b), a copy of this license amendment request is being provided to the State of Wisconsin.

There are no regulatory commitments contained in this submittal. Solutions requests approval of the proposed change by December 2017. If you should have any questions regarding this submittal, please contact me at (224) 789-4025.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on June 27, 2016.

Respectfully,

Gerard van Noordennen

Gerard van Noordennen
Vice President Regulatory Affairs

Attachments

1.) Attachment 1, LACBWR License Amendment Request
2.) Attachment 2, LACBWR Proposed License Condition
3.) Attachment 3, LACBWR Proposed License Termination Plan
4.) Attachment 4, License Termination Plan Chapter 7 Redacted Version
5.) Attachment 5, Reference Documentation
6.) Attachment 6, Preflight Report for CD Attachments

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LaCrosse*Solutions*, LLC PROPRIETARY FINANCIAL INFORMATION AFFIDAVIT

Affidavit of Gerard van Noordennen, Vice President Regulatory Affairs, LaCrosse*Solutions*, LLC.

LTP Chapter 7, contained in Attachment 3 of this submittal, consists of proprietary financial information that LaCrosse*Solutions*, LLC considers confidential. Release of this information would cause irreparable harm to the competitive position of LaCrosse*Solutions*, LLC. The basis for this declaration is:

i. This information is owned and maintained as proprietary by LaCrosse*Solutions*, LLC,

ii. This information is routinely held in confidence by LaCrosse*Solutions*, LLC and not disclosed to the public,

iii. This information is being requested to be held in confidence by the NRC by this petition,

iv. This information is not available in public sources,

v. This information would cause substantial harm to LaCrosse*Solutions*, LLC if it were released publicly, and

vi. The information to be withheld is being transmitted to NRC in confidence.

I, Gerard van Noordennen, being duly sworn, state that I am the person who subscribes my name the foregoing statement, I am authorized to execute the Affidavit on behalf of LaCrosse*Solutions*, LLC, and that the matters and facts set forth in the statement are true to the best of my knowledge, information, and belief.

Gerard van Noordennen

Name: Gerard van Noordennen
Title: Vice President Regulatory Affairs
Company: LaCrosse*Solutions*, LLC

SUBSCRIBED AND SWORN TO BEFORE ME

THIS 27th DAY of June, 2016

Notary Public

LINDA CHOU
Official Seal
Notary Public - State of Illinois
My Commission Expires Dec 7, 2019

Attachment 1

LACBWR

License Amendment Request

La Crosse Boiling Water Reactor (LACBWR)
License Amendment Request

New License Condition Related to the License Termination Plan,
Discussion of Changes, Technical and Regulatory Analysis
Including Significant Hazards Consideration Discussion

1.0 INTRODUCTION

The LACBWR facility is an Atomic Energy Commission Demonstration Project Reactor, which went critical in 1967 and commenced commercial operation in November 1969 and which was capable of producing 50 megawatts. Dairyland purchased LACBWR in July 1973. LACBWR was shut down on April 30, 1987. All 333 spent nuclear fuel elements from LACBWR have been transferred from the Fuel Element Storage Well to dry cask storage at the on-site Independent Spent Fuel Storage Installation (ISFSI) as of September 19, 2012. The remaining LACBWR unit, and its associated buildings and structures are ready for dismantlement and decommissioning activities. Dairyland will continue to operate the Genoa 3 coal-fired generating facility located at the site.

SAFSTOR was utilized prior to license transfer as the decommissioning approach since the permanent shutdown and defueling of LACBWR, with limited decontamination and dismantlement for the LACBWR facility. The new plan is to shift to the decommissioning method (DECON), accelerate the decommissioning schedule, and begin decommissioning at this time. The revised schedule reflects that the Reactor was removed and shipped in 2007 and the spent fuel has been previously transferred to the on-site ISFSI facility at the LACBWR Site. The decontamination and dismantlement of the ISFSI and associated systems will occur once the spent fuel is transferred offsite. Decommissioning is scheduled to be completed by the end of 2018 excluding the ISFSI facility.

Dairyland's SAFSTOR Decommissioning Plan (D-Plan) was approved on August 7, 1991. The D-Plan includes the Post-Shutdown Decommissioning Activities Report (PSDAR). The joint document is titled, LACBWR Decommissioning Plan and Post-Shutdown Decommissioning Activities Report (D-Plan/PSDAR). The PSDAR public meeting was held on May 13, 1998.

Section 50.82(a)(9) to Title 10 of the Code of Federal Regulations requires that a licensee must submit an application for the termination of the site's Part 50 license. The application for termination of the license must be accompanied or preceded by a license termination plan to be submitted for NRC approval. The license termination plan is to be a supplement to the plant's UFSAR or an equivalent document (D-Plan/PSDAR) and is required to be submitted at least two years before the date of license termination. The proposed license change provided in this attachment is submitted to satisfy the requirements of 10 CFR 50.82(a)(10) for approval of the License Termination Plan (LTP) by license amendment. Solutions is not, at this time, submitting its application for termination of license.

2.0 DESCRIPTION OF PROPOSED CHANGES

Solutions proposes to amend the license to include a provision to allow Solutions to make changes to the approved LTP without prior NRC approval, similar to the flexibility afforded to licensees in making changes to the facilities or procedures, as described in the SAR or equivalent (D-Plan/PSDAR).

The change method includes nine change criteria elements. Thus, Solutions proposes to amend the LACBWR possession only license to incorporate a new license condition, License Condition 2.C (5) as follows:

2. C (5) License Termination Plan (LTP)

Solutions shall implement and maintain in effect all provisions of the approved License Termination Plan, as approved in License Amendment No. xxx subject to and as amended by the following stipulations:

Solutions may make changes to the LTP without prior approval provided the proposed changes do not meet any of the following criteria:

(A) Require Commission approval pursuant to 10 CFR 50.59.

(B) Result in significant environmental impacts not previously reviewed.

(C) Detract or negate the reasonable assurance that adequate funds will be available for decommissioning.

(D) Decrease a survey unit area classification (i.e., impacted to not impacted; Class 1 to Class 2; Class 2 to Class 3; or Class 1 to Class 3) without providing the NRC a minimum 14 day notification prior to implementing the change in classification.

(E) Increase the soil or buried piping derived concentration guideline levels (DCGL) and related minimum detectable concentrations (for both scan and fixed measurement methods).

(F) Increase the Basement Dose Factors.

(G) Increase the radioactivity level, relative to the applicable DCGL, at which an investigation occurs.

(H) Change the statistical test applied other than the Sign test or Wilcoxon Rank Sum test.

(I) Increase the probability of making a Type I decision error above the level stated in the LTP.

3.0 TECHNICAL ANALYSIS

The LACBWR LTP describes the process used to meet the requirements for terminating the LACBWR 10 CFR Part 50 possession only license and release the site for unrestricted use. The LTP has been prepared in accordance with the requirements in 10 CFR 50.82(a)(9) and is submitted as a supplement to the LACBWR SAR equivalent D-Plan/PSDAR. The LTP submittal is accompanied by a proposed license amendment that establishes the criteria for when changes to the LTP require prior NRC approval. The subsections below provide a brief summary of the eight chapters of the LTP.

The LTP includes a discussion on the following topics:

- Introduction and general information,
- Site Characterization to ensure that Final Radiation Surveys (FRS) cover all areas where contamination existed, remains, or has the potential to exist or remain,
- Identification of remaining dismantlement activities,
- Plans for site remediation,
- A description of the FRS plan to confirm that LACBWR will meet the release criteria in 10 CFR 20, Subpart E,
- Dose-modeling scenarios that ensure compliance with the radiological criteria for license termination,
- An estimate of the remaining site-specific decommissioning costs, and
- A supplement to the SAR equivalent (D-Plan/PSDAR) and the Environmental Report describing any new information or significant environmental change associated with proposed license termination activities.

This license amendment request gives the NRC the opportunity to review the LACBWR LTP to ensure Solutions' planned activities and processes meet the criteria in 10 CFR 50.82(a)(9) and NUREG-1700 (Reference 2). Additionally, in accordance with NUREG-1700, Revision 1, Appendix 2, the license condition requires NRC approval for changes to the methodology that could result in increasing the amount of plant-related activity remaining at the time of license termination compared to the methodology the NRC reviewed in the proposed LTP.

Since the LTP is based on NRC guidance and establishes the methodology Solutions will use to meet license termination criteria, this proposed license amendment is appropriate to allow completion of the LACBWR decommissioning project and license termination.

4.0 REGULATORY ANALYSIS

4.1 No Significant Hazards Consideration

In accordance with 10 CFR 50.92, Solutions has reviewed the proposed changes and concluded that the proposed changes do not involve a Significant Hazard Consideration (SHC). The proposed changes do not involve an SHC because the changes would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated.

   The only remaining accident following completion of fuel transfer to the ISFSI is a radioactive release accident where spontaneous release of the (non-ISFSI-related) radioactive source term remaining at the LACBWR site in a form and quantity is immediately released through an airborne or liquid release path.

   A radioactive release analysis was performed to establish the bounding event at the site considering the current stage of LACBWR decommissioning. 1.175 Ci of radioactive material is conservatively estimated in the analysis to be present on plant surfaces, and as such represents the assumed total non-ISFSI radioactive source term remaining at the LACBWR site. The LACBWR analysis of postulated release events separately considers the portion of this remaining radioactive contamination that is immediately releasable as airborne contamination and that is immediately releasable as contaminated liquid.

   A conservative fraction of 30 percent of the total remaining source term is assumed in the analysis to be immediately available for airborne release. The analysis results demonstrate that the consequences of releasing 30 percent of the non-ISFSI radioactive source term remaining at the LACBWR site to the atmosphere are well within the applicable 10 CFR 100.11 and EPA PAG limits.

   The portion of the total remaining source term conservatively assumed in the analysis to be available for liquid release at any one time is 80 percent of the radioactively contaminated liquid stored in the site retention tank. In the unlikely event that 80 percent of the retention tank volume at a total radionuclide concentration of 3.9E-03 μCi/cc were to be released from the retention tank at a flow rate of 20 gpm, the normal effluent concentration limits of 10 CFR 20, Appendix B, Table 2, would not be exceeded. Thus, the liquid release analysis demonstrates that there is no reasonable likelihood that a postulated radioactive liquid release event could result in exceeding the normal effluent concentration limits of 10 CFR 20, Appendix B.

With consideration for the current stage of LACBWR decommissioning and with spent nuclear fuel now stored in the ISFSI, the bounding radioactive release analysis, for both airborne and liquid releases, confirms that the minimal radioactive material resulting from LACBWR operation and remaining on the LACBWR site is insufficient for any potential event to result in exceeding dose limits or otherwise involving a significant adverse effect on public health and safety.

The proposed change does not affect the boundaries used to evaluate compliance with liquid or gaseous effluent limits, and has no impact on plant operations. The proposed changes do not have an adverse impact on the remaining decommissioning activities or any decommissioning related postulated accident consequences.

The proposed changes related to the approval of the LTP do not affect operating procedures or administrative controls that have the function of preventing or mitigating the remaining decommissioning design basis accident. Therefore, the proposed changes do not involve a significant increase in the probability or consequences of any accident previously evaluated.

2. Create the possibility of a new or different kind of accident from any accident previously evaluated.

The accident analysis for the facility related to decommissioning activities is described in the D-Plan/PSDAR. The requested license amendment is consistent with the plant activities described in the D-Plan/PSDAR. Thus, the proposed changes do not affect the remaining plant systems, structures, or components in a way not previously evaluated.

There are sections of the LTP that refer to the decommissioning activities still remaining. These activities are performed in accordance with approved site processes and undergo a 10 CFR 50.59 review as required prior to initiation. The proposed amendment merely makes mention of these processes and does not bring about physical changes to the facility.

Therefore, the facility conditions for which the remaining postulated accident has been evaluated is still valid and no new accident scenarios, failure mechanisms, or single failures are introduced by this amendment. The system operating procedures are not affected. Therefore, the proposed changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The LTP is a plan for demonstrating compliance with the radiological criteria for license termination as provided in 10 CFR 20.1402 (Reference 3). The margin of safety defined in the statements of consideration for the final rule on the Radiological Criteria for License Termination is described as the margin between the 100 mrem/yr public dose limit established in 10 CFR 20.1301 for licensed operation and the 25 mrem/yr dose limit to the average member of the critical group at a site considered acceptable for unrestricted use (one of the criteria of 10 CFR 20.1402). This margin of safety accounts for the potential effect of multiple sources of radiation exposure to the critical group. Since the License Termination Plan is designed to comply with the radiological criteria for license termination for unrestricted use, the LTP supports this margin of safety.

In addition, the LTP provides the methodologies and criteria that will be used to perform remediation activities of residual radioactivity to demonstrate compliance with the ALARA criterion of 10 CFR 20.1402.

Additionally, the LTP is designed with recognition that (a) the methods in MARSSIM (Multi-Agency Radiation Survey and Site Investigation Manual) (Reference 4) and (b) the building surface contamination levels are not directly applicable to use with complex nonstructural components. Therefore, the LTP states that nonstructural components remaining in buildings (e.g., pumps, heat exchangers, etc.) will be evaluated against the criteria of Regulatory Guide 1.86 (Reference 5) to determine if the components can be released for unrestricted use. The LTP also states that materials, surveyed and evaluated as a-part of normal decommissioning activities and prior to implementation of the final radiation surveys, will be surveyed for release using current site procedures to demonstrate compliance with the "no detectable" criteria. Such materials that do not pass these criteria will be controlled as contaminated.

Also, as previously discussed, the bounding radioactive release accident analysis for decommissioning is based on a conservative estimate of the radioactive material remaining onsite. Since the bounding accident results in a release of more airborne and liquid radioactivity than can be released from planned LTP decommissioning events, the margin of safety associated with the consequences of decommissioning accidents is not reduced by this activity.

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

4.2 Applicable Regulatory Requirements/Criteria

Pursuant to 10 CFR 50.82(a)(9), nuclear power reactor licensees are required to submit an LTP prior to, or along with, their application for termination of a license. This LTP will become a supplement to the LACBWR D-Plan/PSDAR. The LTP is required to be submitted at least 2 years before termination of the license.

Solutions is submitting a proposed amendment to the LACBWR possession only license to satisfy the requirements of 10 CFR 50.82(a)(10) for approval of the LACBWR LTP by license amendment. The change to the license will authorize the implementation of the LTP, allows the implementation of the methods outlined in Chapter 5 of the LTP for site compliance with dose-based release criteria, and provides appropriate and necessary conditions for when changes can be made without prior NRC review and approval.

Solutions prepared the LTP using the guidance in:

- Regulatory Guide 1.179 "Standard Format and Contents for License Termination Plans for Nuclear Power Reactors," (Reference 6)
- NUREG-1575 "Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM),"
- NUREG-1700 "Standard Review Plan for Evaluating Nuclear Power Reactor License Termination Plans," and
- NUREG-1757 "Consolidated NMSS Decommissioning Guidance" (Reference 7).

5.0 ENVIRONMENTAL CONSIDERATION

Solutions has evaluated the proposed changes against the criteria for identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.22 (Reference 8). Solutions has determined that the proposed changes meet the criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and 10 CFR 51.22(c)(10) and as such, has determined that no irreversible consequences exist in accordance with 10 CFR 50.92(b). The following is provided in support of the conclusion.

(i) The proposed changes involve no significant hazards consideration.

As demonstrated in Section 4.1 of this attachment, the proposed changes do not involve an SHC.

(ii) There is no significant change in the types or significant increase in the amounts of any effluents that may be released off site.

The proposed license amendment is consistent with the plant activities described in the D-Plan/PSDAR. No changes in effluent system requirements or controls are proposed in this change. The environmental impacts associated with radiation dose to members of the public related to decommissioning activities and site release for unrestricted use were considered in NUREG-0586, "Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities," (Reference 9) NUREG-0586, Supplement 1, and NUREG-1496, "Generic Environmental Impact Statement in Support of the Rulemaking on Radiological Criteria for License Termination" (Reference 10).

NUREG-0586 provides a generic environmental assessment of decommissioning a reference nuclear facility. Based on the findings in NUREG-0586, the NRC concluded a generic finding of "no significant (environmental) impact." The NRC further concluded that no additional Environmental Impact Statement would need to be prepared in connection with decommissioning a particular nuclear site unless the impacts of a particular plant have site-specific considerations significantly different from those studied generically. LTP Chapter 8 provides an updated assessment of the environmental effects of decommissioning LACBWR. The updated assessment also determined that the environmental effects from decommissioning LACBWR are minimal and there are no adverse effects outside the bounds of NUREG-0586, Supplement 1.

Based on the above, there will not be a significant change in the types or increase in the amounts of effluents released offsite for the remaining decommissioning activities. The release of effluents from the facility will continue to be controlled by site procedures throughout the remaining decommissioning activities, and continue to be performed in accordance with the LACBWR Offsite Dose Calculation Manual, as applicable.

(iii) There is no significant increase in individual or cumulative occupational radiation exposure.

The attributes identified in NUREG-0586, Supplement 1 were compared with the remaining activities for LACBWR and the following conclusion was reached:

- Solutions will maintain annual occupational radiation exposure to individuals as low as reasonably achievable. These exposures will be at, or below, the estimated values in Table 4-1 of NUREG-0586, Supplement 1. LTP Section 3.4 provides a dose estimate for LACBWR decommissioning.

LTP Chapter 8 provides an updated assessment of the environmental effects of decommissioning LACBWR. The updated assessment also determined that the environmental effects from decommissioning LACBWR are minimal and there are no adverse effects outside the bounds of NUREG-0586, Supplement 1.

Based on the above, there is no significant increase in individual or cumulative occupational exposure due to decommissioning LACBWR.

6.0 CONCLUSION

Based on the evaluations above: (1) there is reasonable assurance that the health and safety of the public will not be endangered by the conduct of activities in the proposed manner, and (2) such activities will be conducted in compliance with the NRC's regulations. Therefore, the proposed amendment will not be inimical to the common defense and security or the health and safety of the public.

7.0 REFERENCES

1) 10 CFR 50.82, "Termination of License"

2) NUREG-1700, "Standard Review Plan for Evaluating Nuclear Power Reactor License Termination Plans"

3) 10 CFR 20, "Standards for Protection Against Radiation"

4) NUREG-1575, "Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)"

5) Regulatory Guide 1.86, "Termination of Operating Licenses for Nuclear Reactors"

6) Regulatory Guide 1.179, "Standard Format and Contents for License Termination Plans for Nuclear Power Reactors"

7) NUREG-1757, "Consolidated NMSS Decommissioning Guidance"

8) 10 CFR 51.22, "Criterion for categorical exclusion; identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not requiring environmental review"

9) NUREG-0586, "Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities" and NUREG-0586 Supplement 1, "Regarding the Decommissioning of Nuclear Power Reactors"

10) NUREG-1496, "Generic Environmental Impact Statement in Support of the Rulemaking on Radiological Criteria for License Termination"

Attachment 2

LACBWR

Proposed License Amendment

The following license condition to be added to the LACBWR possession only license:

2.C (5) License Termination Plan (LTP)

Solutions shall implement and maintain in effect all provisions of the approved License Termination Plan, as approved in License Amendment No. xxx subject to and as amended by the following stipulations:

Solutions may make changes to the LTP without prior approval provided the proposed changes do not meet any of the following criteria:

(A) Require Commission approval pursuant to 10 CFR 50.59.

(B) Result in significant environmental impacts not previously reviewed.

(C) Detract or negate the reasonable assurance that adequate funds will be available for decommissioning.

(D) Decrease a survey unit area classification (i.e., impacted to not impacted; Class 1 to Class 2; Class 2 to Class 3; or Class 1 to Class 3) without providing the NRC a minimum 14 day notification prior to implementing the change in classification.

(E) Increase the soil or buried piping derived concentration guideline levels (DCGL) and related minimum detectable concentrations (for both scan and fixed measurement methods).

(F) Increase the Basement Dose Factors.

(G) Increase the radioactivity level, relative to the applicable DCGL, at which an investigation occurs.

(H) Change the statistical test applied other than the Sign test or Wilcoxon Rank Sum test.

(I) Increase the probability of making a Type I decision error above the level stated in the LTP.

Attachment 3

LACBWR

Proposed License Termination Plan

(See attached binder or CD)

Attachment 4

LACBWR

Proposed License Termination Plan

Chapter 7

Redacted Version

LA CROSSE BOILING WATER REACTOR
LICENSE TERMINATION PLAN
CHAPTER 7
UPDATE OF THE SITE-SPECIFIC DECOMMISSIONING COSTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ACRONYMS AND ABBREVIATIONS

Dairyland	Dairyland Power Cooperative
DOT	Department of Transportation
D-Plan/ PSDAR	Decommissioning Plan and Post-Shutdown Decommissioning Activities Report
FESW	Fuel Element Storage Well
FRS	Final Radiation Survey
GTCC	Greater Than Class C
ISFSI	Independent Spent Fuel Storage Installation
LACBWR	La Crosse Boiling Water Reactor
LTP	License Termination Plan
NDT	Nuclear Decommissioning Trust
NRC	Nuclear Regulatory Commission
QA	Quality Assurance
QC	Quality Control
ZNPS	Zion Nuclear Power Station

7. Update of the Site-Specific Decommissioning Costs

7.1. Introduction

In accordance with 10 CFR 50.82(a)(9)(ii)(F) and Regulatory Guide 1.179, *"Standard Format and Content for License Termination Plans for Nuclear Power Reactors"* (1), the updated site specific cost estimates and funding plans for completing the La Crosse Boiling Water Reactor (LACBWR) decommissioning are provided. Regulatory Guide 1.179 provides guidance on the details of the information to be presented in the License Termination Plan (LTP).

This chapter provides an estimate of the remaining decommissioning costs at the time of LTP submittal and also compares these estimated costs with the present funds set aside for decommissioning. If it is determined that there is a deficit in the present funding, the LTP must indicate the means for ensuring that adequate funds are available to complete the decommissioning.

The decommissioning cost estimate evaluates the following cost elements:

1. Cost assumptions used, including contingency factors;
2. Major decommissioning activities and tasks;
3. Unit cost factors;
4. Estimated costs for decontamination and removal of equipment and structures;
5. Estimated costs for waste disposal, including disposal site surcharges;
6. Estimated Final Radiation Survey (FRS) costs; and
7. Estimated total costs.

The cost estimate focuses on the remaining work, including costs of labor, materials, equipment, energy, and services. The cost estimate includes the cost of the planned remediation activities as well as the cost of the transportation and disposal of the waste generated by the planned work.

7.1.1. Historical Perspective

The LACBWR facility was an Atomic Energy Commission Demonstration Project Reactor. The reactor went critical in 1967 and commenced commercial operation in November 1969. The reactor was capable of producing 50 Megawatt Electric (MWe). Dairyland Power Cooperative (Dairyland) purchased LACBWR in July 1973. LACBWR was shut down on April 30, 1987. The *LACBWR Decommissioning Plan* (2) was approved on August 7, 1991. Because the licensing history of LACBWR spans a period that includes several decommissioning regulation changes, The D-Plan has been revised to the *LACBWR Decommissioning Plan and Post-Shutdown Decommissioning Activities Report* (D-Plan/PSDAR) Revision March 2014 (3).

All 333 spent nuclear fuel elements from LACBWR have been transferred from the Fuel Element Storage Well (FESW) to dry cask storage at the on-site Independent Spent Fuel Storage Installation (ISFSI) as of September 19, 2012. The remaining LACBWR buildings and structures are ready for dismantlement and decommissioning activities. Dairyland will continue to operate the Genoa 3 coal-fired generating facility located adjacent to the LACBWR facility.

In a letter dated October 8, 2015 (1), Dairyland and LaCrosse*Solutions*, LLC (Solutions) requested Nuclear Regulatory Commission (NRC) consent to transfer Dairyland's possession, maintenance and decommissioning authorities, under Possession Only License No. DPR-45, from Dairyland to Solutions. NRC provided consent to the license transfer in May 2016. In compliance with 10 CFR 50.75(f)(1) and 10 CFR 50.82(a)(8)(v)(viii), Solutions will demonstrate financial assurance on an annual basis.

After the balance of the site is remediated and the as-left radiological conditions are demonstrated to be below the unrestricted use criteria specified in 10 CFR 20.1402, the licensed area will be reduced to a small area around the ISFSI and Possession Only License No. DPR-45 will be transferred back to Dairyland.

7.1.2. Cost Estimates Previously Docketed with the NRC

An updated cost study was completed in November 2010 and was included as part of a revised LACBWR D-Plan/PSDAR, submitted by Dairyland to the NRC in November 2012. As part of this cost update, ISFSI decommissioning costs were identified uniquely as a specific item.

An updated cost study completed in March 2013 was included as part a revised LACBWR D-Plan/PSDAR submitted by Dairyland to the NRC in March 2014. As part of this cost update, some contaminated structures previously assumed to be decontaminated and left intact were evaluated for demolition and disposal.

7.2. Decommissioning Cost Estimate

The decommissioning cost estimate presented herein represents the projected costs to complete the remaining decommissioning work as of October 1, 2015. This estimate was prepared based upon an assessment of the remaining work and incorporating experience gained while performing similar decommissioning tasks including the ongoing decommissioning of the Zion Nuclear Power Station (ZNPS) through the work of its subsidiary Zion*Solutions* LLC.

The decommissioning cost estimate includes application of contingency, as specific provision for unforeseeable elements of cost within the defined project scope. Contingencies are particularly important where previous experience has shown that unforeseeable events, which may increase costs, are likely to occur. The contingency, as used in this estimate, does not account for price escalation and inflation in the costs of decommissioning over the remaining project duration.

The site-specific decommissioning cost estimate presents a breakdown of all costs associated with completing the decommissioning and unrestricted release of the LACBWR site, other than the area bounded by the ISFSI. The estimate includes the costs required to accomplish unrestricted release and restore the site to a safe and stable condition as well as the operation of the ISFSI until the site and the remaining ISFSI are transferred back to Dairyland.

The following subsections present a description of how the cost estimate was prepared and a summary and breakdown of the estimated costs.

7.2.1. Cost Estimate Description and Methodology

The cost estimates include consideration of regulatory requirements, contingency for unknown or uncertain conditions, and the availability of low and high-level radioactive waste disposal sites.

The methodology utilized to develop the cost estimate follows the basic approach presented in *Guidelines for Producing Commercial Nuclear Power Plant Decommissioning Cost Estimates* (4), which uses a unit cost factor approach for estimating the decommissioning activity costs. It also includes the use of site specific information when available (e.g., hourly labor rates, and commodities).

The updated estimate completed in March 2013 has been utilized to obtain site-specific commodity quantities for this estimate. The commodity weights and estimated unit cost factors were applied, which take into consideration the current decommissioning approach and schedule, to arrive at an updated cost estimated to decommission LACBWR. Dairyland and Solutions also utilized 25 years of corporate experience in planning and scheduling as well as the latest available industry experience (e.g., information from the decommissioning of ZNPS).

The estimate does not include the transfer of spent fuel, which has been previously transferred to an ISFSI facility, the security costs for the ISFSI facility, or the removal of certain large components and decommissioning work previously completed.

Additionally, Dairyland and Solutions performed a contingency and risk analysis so that the potential additional costs due to expected but undefined risks and uncertainties could be addressed and included in the cost estimate.

The resulting information was then compiled into a decommissioning cost estimate. The following sections provide a summary of those results.

7.2.2. Summary of the Site-Specific Decommissioning Cost Estimate

The overall remaining decommissioning cost (including scope risk contingency) is estimated to be $[redacted] Million (in current year dollars), with a base estimated cost of $[redacted] Million, plus a scope risk contingency of $[redacted] Million. The cost estimates include provisions for cost escalation based upon the following assumptions:

- All estimated costs including labor, staff, materials, equipment, professional services, waste transportation and disposal are in 2015 dollars.
- Although all costs in this LTP are in current year dollars, the project baseline does include provisions to escalate costs based on the Consumer Price Index for all Urban Customers – U.S. City Average All Items, Not Seasonally Adjusted (CPI-U NSA).
- The associated Class A radioactive waste management costs are covered by existing fixed-price contracts with Energy*Solutions*. Therefore, the waste management costs for these items are well known and not likely to vary due to waste volume uncertainties.
- No costs for Class B/C waste are included in the estimate, as all materials classified as B/C waste were previously removed by Dairyland.

The cost estimate includes the costs for radiological decommissioning and site restoration. A summary of the cost for each part of the decommissioning program is provided in Table 7-1.

Table 7-1 Cost Summary for Radiological Decommissioning and Site Restoration

	Radiological Decommissioning	Site Restoration[1]	Total Project
Performance Baseline	$[redacted] Million	$2.6 Million	$[redacted] Million
Contingency	$[redacted] Million	$0.3 Million	$[redacted] Million
Total	$[redacted] Million	$2.9 Million	$[redacted] Million

Note 1: Site restoration is included for completeness, but not required for license termination funding purposes.

Detailed breakdowns of the estimated costs for radiological decommissioning and site restoration programs are provided in sections 7.2.3 and 7.2.5, respectively. Spent fuel management is addressed in section 7.2.4. Estimated contingency costs are addressed in section 7.2.6.

7.2.3. Radiological Decommissioning Costs

Consistent with the NRC definition of decommissioning under 10 CFR 50.2, the radiological decommissioning costs under this category consider only those costs associated with normal decommissioning activities necessary for release of the site (other than the ISFSI) for unrestricted use. It does not include costs associated with the disposal of non-radiological materials or structures beyond those necessary to terminate the Part 50 license or the costs associated with construction or operation of an ISFSI.

The estimated cost for radiological decommissioning is $[redacted] Million. A contingency of $[redacted] Million is estimated, bringing the total to $[redacted] Million.

The remaining decommissioning scope of work included in this estimate is described in detail in other chapters of this LTP. Overall, that work scope includes completion of the removal, transportation and disposal of the major components; completion of the removal, transportation and disposal of the remaining equipment; decontamination and/or bulk demolition of radiological impacted structures and transportation and disposal of the resulting radioactive wastes; performance of the FRS and associated license termination activities. The estimated costs include the labor, equipment, materials, services and fees needed to conduct the work. The estimated cost also includes all of the program support activities and services necessary to manage and safely carry out a large-scale dismantlement and demolition project. These program support activities include project management, work controls and site administration; technical support services, such as radiation protection, safety, engineering, security, Quality Assurance (QA)/Quality Control (QC), environmental monitoring, waste management and decommissioning subject matter experts needed to support the project.

A high level breakdown of the estimated radiological decommissioning cost by major project activity is provided in Table 7-2.

Table 7-2 Estimated Radiological Decommissioning Cost by Major Project Activity

PROJECT ACTIVITY	COST[1]
Project Development & LTP Preparation	$1.7 Million
Pre-Mobilization Planning and Rail Upgrades	$3.8 Million
D&D Mobilization and Management	$1.3 Million
Dismantlement & Demolition	$26.5 Million
Radioactive Waste Transportation and Disposal	$[redacted] Million
Final Radiation Surveys	$1.1 Million
Program Management	$11.1 Million
TOTAL	**$[redacted] Million**

Note 1: Columns may not add due to rounding

A high level breakdown of the estimated radiological decommissioning cost by major resource type is provided in Table 7-3. A more detailed breakdown of the estimated radiological decommissioning cost by project activity is provided in Table 7-4.

Table 7-3 Estimated Radiological Decommissioning Cost by Major Resource Type

RESOURCE	COST[1]
Staff Labor	$6.1 Million
Craft Labor	$11.3 Million
Rad Protection Technicians	$3.6 Million
Materials & Supplies	$4.5 Million
Equipment	$7.5 Million
Subcontracts & Professional Services	$8.1 Million
Radioactive Waste Transportation & Disposal	$[redacted] Million
Other Direct Costs & Fees	$4.2 Million
TOTAL	**$[redacted] Million**

Note 1: Columns may not add due to rounding

Table 7-4 Breakdown of Radiological Decommissioning Costs by Detailed Activity

ACTIVITY		COST[1]
PROJECT DEVELOPMENT & LTP PREPARATION	Total	**$1.7 Million**
LACBWR LTP (313196)		$0.6 Million
ES Bid & Proposal (941351)		$1.1 Million
PRE-MOBILIZATION PLANNING AND RAIL UPGRADES	Total	**$3.8 Million**
Program Development & Planning		$0.6 Million
D&D Pre-Mobilization Planning		$0.1 Million
Rail Upgrades		$2.3 Million
Preliminary Characterization		$0.7 Million
D&D MOBILIZATION AND MANAGEMENT	Total	**$1.3 Million**
D&D Mobilization and Management		$1.3 Million
DISMANTLEMENT & DEMOLITION	Total	**$26.5 Million**
D&D Reactor Building		$8.1 Million
D&D Turbine Building		$7.7 Million
D&D Waste Treatment Building		$1.2 Million
D&D Balance of Plant		$9.5 Million
RADIOACTIVE WASTE TRANSPORTATION AND DISPOSAL	Total	**$[redacted] Million**
FINAL RADIATION SURVEYS	Total	**$1.1 Million**
Reactor Building FRS & Support		$0.4 Million
Turbine Building FRS & Support		$0.4 Million
Waste Treatment Building FRS & Support		$0.2 Million
Balance of Plant FRS & Support		$0.2 Million
PROGRAM MANAGEMENT	Total	**$11.1 Million**
Project & Site Management		$5.5 Million
Safety Program		$1.8 Million
Regulatory Program & NRC Fees		$1.0 Million
Radiation Protection Program Management		$0.8 Million
Characterization Program Management		$0.8 Million
Waste Program Management		$1.2 Million
TOTAL		**$[redacted] Million**

Note 1: Columns may not add due to rounding

The total estimated cost for radioactive waste disposition (containers, transportation and disposal) is $[redacted] Million. These waste management costs are comprised of Class A Large Components, Class A Containerized Wastes and Class A Bulk Materials.

The associated Class A radioactive waste management costs are covered by existing fixed-price contracts with Energy*Solutions*. Therefore, the waste management costs for these items are well known and not likely to vary due to waste volume uncertainties. The resulting radioactive waste streams and the disposal and transportation contracts can be categorized as follows:

Class A Large Components. This category of waste includes equipment that will be transported and disposed of intact, enclosed in rail cars or prepared to serve as its own waste container. These items have been radiologically and physically characterized. As such, the inventory of these items and their disposal volumes are known. The associated waste management costs are covered by existing fixed-price contracts with Energy*Solutions* for disposal in Clive, Utah. Therefore, the waste management costs for these items are well known and not likely to vary.

Class A Bulk Materials. This category of waste primarily consists of concrete rubble or similar materials contaminated with low levels of radioactivity, and various large components described above. Waste will be loaded into appropriate containers and trucked to a rail trans-load facility in Winona, MN where the waste container will be transferred to a rail car and then shipped to the Energy*Solutions* disposal site in Clive, Utah. The cost for disposal and transportation of this material is covered by a fixed-price contract that covers any and all material of this type from this decommissioning project, without regard to the total mass or volume. Therefore, these costs are known and are unlikely to vary. This category of waste generally comprises greater than 95% of the total volume and mass and greater than 80% of the estimated waste management costs for all radioactive waste expected to be generated by this decommissioning effort.

Class A Containerized Wastes. This category of waste primarily consists of material that will need to be packaged in strong-tight/industrial containers, such as intermodals or fabricated steel boxes. Typically, this would include small pieces of contaminated equipment, pipe or debris which require containerization to meet Department of Transportation (DOT) regulations or mitigate radiological handling concerns. Waste will be loaded into appropriate containers and trucked to a rail trans-load facility in Winona, MN where the waste container will be transferred to a rail car and then shipped to the Energy*Solutions* disposal site in Clive, Utah.

Greater Than Class C (GTCC) and Class B/C Waste. No costs for disposal of GTCC waste are included in the estimate, as it was included as a part of the previously completed spent fuel disposition. Also, no costs for Class B/C waste are included in the estimate, as all materials classified as B/C waste were previously removed by Dairyland.

7.2.4. Spent Fuel Management

All spent nuclear fuel elements from LACBWR have been transferred from the FESW to dry cask storage in the ISFSI.

Solutions will assume responsibility for the ISFSI Site, including security requirements. Solutions will enter into a "Company Services Agreement" with Dairyland, pursuant to which Dairyland will provide operations, maintenance, access control, and security services to and for

the ISFSI site. Dairyland is responsible for the costs relating to the ISFSI and those costs are not included in this decommissioning estimate.

7.2.5. Site Restoration Costs

Solutions acknowledges that the costs to restore the LACBWR property are not considered by the NRC staff as part of decommissioning costs. Nevertheless, there is significant interest by many stakeholders in these costs and they are presented herein. The estimated cost for the anticipated work scope is $2.6 Million. A contingency of $0.3 Million is estimated, bringing the total cost to $2.9 Million. Overall, that work scope includes removal of any remaining hazardous materials, demolition of remaining structures, backfilling of any open excavations or void spaces, and final grading and stabilization against erosion.

The estimated costs include the labor, equipment, materials, professional services and fees needed to conduct the work. In general, most of this work is anticipated to be performed by contractors however, the estimated cost also includes all of the program support activities and services necessary to manage and safely carry out the work.

A high level breakdown of the estimated site restoration cost by major project activity is provided in Table 7-5. A more detailed breakdown of the estimated site restoration cost by project activity is provided in Table 7-6.

Table 7-5 Estimated Site Restoration Cost by Major Project Activity

PROJECT ACTIVITY	COST[1]
Project Development	$0.2 Million
Pre-Mobilization Planning	$0.1 Million
D&D Mobilization and Management	$0.2 Million
Waste Transportation and Disposal	$0.4 Million
Site Restoration	$0.8 Million
Program Management	$0.8 Million
TOTAL	**$2.6 Million**

Note 1: Columns may not add due to rounding

7.2.6. Contingency

Uncertainty associated with the decommissioning cost estimate, and the need to allocate additional funding to cover contingency has been included in this estimate. Accounting for contingency has been evaluated from two standpoints, operational efficiency and scope expansion risk. Within the context of this cost estimate, operational efficiency contingency is defined as the occurrence of events or circumstances that can prolong project duration or make the execution of a given work scope more difficult. Examples of these types of events include weather related delays, equipment or tool breakage or unavailability, and interferences from other work activities. Scope expansion risk within the context of this estimate is defined as the need to perform unplanned work activities or expansion of the work activities that were planned.

Examples of this type of project risk would be discovering new or additional contaminated media.

Table 7-6 Breakdown of Site Restoration Costs by Detailed Activity

ACTIVITY		COST[1]
PROJECT DEVELOPMENT	Total	**$0.2 Million**
	ES Bid & Proposal (941351)	$0.2 Million
PRE-MOBILIZATION PLANNING	Total	**$0.1 Million**
	Program Development & Planning	$0.1 Million
D&D MOBILIZATION AND MANAGEMENT	Total	**$0.2 Million**
	D&D Mobilization and Management	$0.2 Million
WASTE TRANSPORTATION & DISPOSAL	Total	**$0.4 Million**
	Non-Radioactive Waste Transportation & Disposal	$0.4 Million
SITE RESTORATION	Total	**$0.8 Million**
	Reactor Building Site Restoration	$0.2 Million
	Turbine Building Site Restoration	$0.2 Million
	Waste Treatment Building Site Restoration	$0.0 Million
	Balance of Plant Site Restoration	$0.4 Million
PROGRAM MANAGEMENT	Total	**$0.8 Million**
	Environmental & Project Management	$0.6 Million
	Safety Program	$0.2 Million
TOTAL		**$2.6 Million**

Note 1: Columns may not add due to rounding

requiring remediation, or a need to perform work in a different manner due to unforeseen conditions or changes in requirements.

As shown in section 7.2.2, the overall contingency is estimated at $[redacted] Million; apportioned as $[redacted] Million for radiological decommissioning and $0.3 Million for site restoration. This contingency was estimated using a quantitative Monte Carlo type probability analysis corresponding to a resulting 85 percent confidence level.

The LACBWR contingency analysis process is consistent with that adopted for the ZNPS decommissioning project.

7.3. Decommissioning Funding Plan

As indicated in section 7.2.2, the estimated cost to complete the radiological decommissioning of the LACBWR, including site restoration costs[1] and contingency, is $84.9 Million (current year dollars) as of October 1, 2015. Table 7.7 summarizes the annualized costs.

Table 7-7 LACBWR Summary of Annualized Costs (in Millions)

	2015	2016	2017	2018	2019	Total
Radiological Decommissioning	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Site Restoration	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Performance Baseline	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Contingency	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Total Project	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

These decommissioning costs will be paid for with funds from the site's Nuclear Decommissioning Trust (NDT) fund. The decommissioning of the LACBWR site ISFSI will be undertaken by Dairyland[2] and will be financed separately to the NDT account amount identified here for decommissioning of the LACBWR site.

The project cash balance of the NDT identified for the decommissioning of the LACBWR site, as agreed to by Solutions, and held in trust by the Owner trustee as of October 1, 2015 was $[redacted] Million.

Based on a time phased cash flow analysis of the radiological decommissioning and site restoration costs, and assuming NDT returns at an annual 2% real, after tax rate of return, the required minimum funding assurance amount to fund the future radiological decommissioning costs equals $[redacted] Million, which is below the $[redacted] Million available balance described above.

This NDT position, together with the $[redacted] Million Surety Bond payable to the NDT, provides for sufficient funding and financial assurance for the completion of the decommissioning of the LACBWR site.

Additionally, although not relied upon here, Solutions parent Energy*Solutions* has agreed with Dairyland to provide a performance guaranty defined in the LACBWR Decommissioning Agreement submitted as part of the license transfer application (5).

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[1] The estimated project decommissioning costs includes an estimate for site restoration costs.

[2] The costs of spent fuel management and associated costs are to be incurred by Dairyland, are estimated to be approximately $2 million per year, and are financed from operating and maintenance funds outside of the NDT. Dairyland has not projected the cost of managing irradiated fuel until title to the fuel and possession of the fuel is transferred to the Secretary of Energy because this cost is indeterminate.

Assuming approval by the NRC of the license transfer application on or before March 31, 2016, Solutions will be submitting the annual demonstration of financial assurance for the year ending 2015 in accordance with 10 CFR 50.75(f)(1) and 10 CFR 50.82(a)(8)(v)-(viii). That submission will be based upon future project costs of radiological decommissioning and site restoration, and the NDT balance as of that date.

7.4. References

1. U.S. Nuclear Regulatory Commission Regulatory Guide 1.179, Standard Format and Content of License Termination Plans for Nuclear Power Reactors, Revision 1 - June 2011.

2. Dairyland Power Cooperative (DPC), LACBWR Decommissioning Plan, Revision – November 2012.

3. Dairyland Power Cooperative, LACBWR Decommissioning Plan and Post Shutdown Decommissioning Activities Report (D-Plan/PSDAR), Revision – March 2014.

4. T.S. LaGuardia et al., Guidelines for Producing Commercial Nuclear Power Plant Decommissioning Cost Estimates, AIF/NESP-036, May 1986.

5. Dairyland Power Cooperative Letter to U.S Nuclear Regulatory Commission, Application for Order Approving License Transfer and Conforming Administrative License Amendments, dated October 8, 2015.

Attachment 5

Reference Documentation

(PDF files on attached CD)

Attachment 6

Preflight Report

For CD Attachments

This document serves as preflight report for Attachment 3 & 5 to the letter LC-2016-0022. The following files do not pass pre-flight criteria or do not meet NRC criteria, but text is word searchable with clarity/legibility of high quality.

LTP	File Name	Preflight Status	Reason
Chapter 1	LACBWR LTP Chapter 1, Rev 0	Failed	Document contains logos and color maps < 300 ppi, clear and legible
Chapter 2	LACBWR LTP Chapter 2, Rev 0	Failed	Document contains logos and color maps < 300 ppi, clear and legible
Chapter 3	LACBWR LTP Chapter 3, Rev 0	Failed	Document contains logos < 300 ppi, clear and legible
Chapter 4	LACBWR LTP Chapter 4, Rev 0	Failed	Document contains logos < 300 ppi, clear and legible
Chapter 5	LACBWR LTP Chapter 5, Rev 0	Failed	Document contains logos < 300 ppi, clear and legible
Chapter 6	LACBWR LTP Chapter 6, Rev 0	Failed	Document contains logos and color maps < 300 ppi, clear and legible
Chapter 7	LACBWR LTP Chapter 7, Rev 0	Failed	Document contains logos < 300 ppi, clear and legible
Chapter 7	LACBWR LTP Chapter 7, Rev 0, Redacted	Failed	Document contains logos < 300 ppi, clear and legible
Chapter 8	LACBWR LTP Chapter 8, Rev 0	Failed	Document contains logos and color maps < 300 ppi, clear and legible

Reference Document Name	File Name	Preflight Status	Reason
Letter from Dairyland Power Cooperative to the Nuclear Regulatory Commission, Application for Order Approving License Transfer and Conforming Administrative License Amendments, dated October 8, 2015	LACBWR Application for Order Approving License Transfer & Conforming Admin License Amend	Failed	Scanned document (unembedded fonts), logos, backgrounds, and signatures < 300 ppi, clear and legible
U.S. Nuclear Regulatory Commission NUREG-0191, Final Environmental Statement related to Operation of the La Crosse Boiling Water Reactor by Dairyland Power Cooperative - April 1980	NUREG-0191 Final-NRC Environmental Assessment	Passed	Scanned document (unembedded fonts), logos, backgrounds, and signatures < 300 ppi, clear and legible
Letter from Dairyland Power Company to the Nuclear Regulatory Commission, Subject: Planning for ISFSI, LAC-14029, March 10, 2008.	LAC-14029 - Planning for ISFSI	Failed	Scanned document (unembedded fonts), logos, backgrounds, maps, and signatures < 300 ppi, clear and legible
Dairyland Power Cooperative, LaCrosse Boiling Water Reactor (LACBWR) Decommissioning Plan, revised November 2003	Dairyland Power Cooperative LACBWR Decommissioning Plan	Failed	Scanned document (unembedded fonts), logos, backgrounds, maps, and signatures < 300 ppi, clear and legible
EnergySolutions GG-EO-313196-RS-RP-001, LACBWR Radiological Characterization Survey Report for October and November 2014 Field Work – November 2015	GG-EO-313196-RS-RP-001, LACBWR 2014 Chz Report	Failed	Document contains logos, signatures and color maps < 300 ppi, clear and legible
EnergySolutions LC-RS-PN-164017-001, LACBWR Radiological Characterization Survey Report for June thru August 2015 Field Work – November 2015	LC-RS-PN-164017-001, Rev. 0	Failed	Document contains logos, signatures and color maps < 300 ppi, clear and legible
Dairyland Power Cooperative, LACBWR Decommissioning Plan and Post-Shutdown Decommissioning Activities Report (D-Plan/PSDAR), Revision - March 2014	DPC to NRC DP and PSDAR Update	Failed	Scanned document (unembedded fonts), logos, backgrounds, and signatures < 300 ppi, clear and legible
EnergySolutions PG-EO-313196-SV-PL-001, Rev. 1, Characterization Survey Plan for the La Crosse Boiling Water Reactor.	PG_EO_313196_SV_PL_001 Rev 1	Failed	Document contains logos, signatures and color maps < 300 ppi, clear and legible
EnergySolutions GP-EO-313196-QA-PL-001, Quality Assurance Project Plan LACBWR Site Characterization Project (QAPP).	GP-EO-313196-QA-PL-001 Characterization QAPP 2014	Failed	Document contains logos, signatures and color maps < 300 ppi, clear and legible

Reference Document Name	File Name	Preflight Status	Reason
EnergySolutions Technical Support Document RS-TD-313196-003, La Crosse Boiling Water Reactor Historical Site Assessment (HSA).	RS-TD-313196-003, LACBWR HSA Rev 0 20151109	Failed	Document contains logos, signatures and color maps < 300 ppi, clear and legible
Dairyland Power Corporation LAC-TR-138, Initial Site Characterization Survey for SAFSTOR – December 2009.	LAC-TR-138 Initial Site Charac Survey	Failed	Document contains color maps and graphs < 300 ppi, clear and legible
EnergySolutions Technical Support Document RS-TD-313196-006, Ludlum Model 44-10 Detector Sensitivity.	RS-TD-313196-006 Rev 0 - Ludlum Model 44-10 Detector Sensitivity	Failed	Document contains scanned pages < 300 ppi, clear and legible
ZionSolutions Technical Support Document 13-004, Examination of Cs-137 Global Fallout in Soils at Zion Station.	TSD-13-004, Rev. 0 - Examination of Cs-137 Global Fallout in Soils at Zion Station Final	Failed	Document contains scanned document (unembedded fonts), logos, maps, graphs, and signatures < 300 ppi, clear and legible
EnergySolutions Technical Support Document RS-TD-313196-001, Radionuclides of Concern During LACBWR Decommissioning	RS-TD-313196-001 Rev 0	Failed	Document contains scanned pages (unembedded fonts), logos, signatures, graphs and color maps < 300 ppi, clear and legible
Haley & Aldrich Inc., Hydrogeological Investigation Report, La Crosse Boiling Water Reactor, Dairyland Power Cooperative, Genoa Wisconsin, File No. 38705-008, January 2015	2015-0115_HAI_Hydrogeologic Investigation Report-Final	Failed	Document contains logos, signatures, graphs and color maps < 300 ppi, clear and legible
EnergySolutions Technical Support Document RS-TD-313196-005, LACBWR Open Air Demolition Limits.	LACBWR RS_TD_313196_005	Failed	Document contains scanned pages (unembedded fonts), logos, signatures, graphs and color maps < 300 ppi, clear and legible
Radiological Effluent Monitoring and Offsite Dose Calculation Manual (ODCM)	Dairyland ODCM Rev 14	Failed	Scanned pages (unembedded fonts)

Reference Document Name	File Name	Preflight Status	Reason
EnergySolutions Technical Support Document, RS-TD-313196-007, Radiation Exposure for LACBWR Decommissioning.	RS-TD-313196-007 Radiation Exposure Projections for LACBWR Decommissioning Rev 0	Failed	Scanned pages (unembedded fonts)
EnergySolutions Technical Support Document RS-TD-313196-002, La Crosse End State Basement Concrete Surface Areas, Volumes, and Void Spaces	RS-TD-313196-002, Rev. 0, LACBWR End State Basement Concrete Surface Areas, Volumes, and Void Spaces	Failed	Document contains scanned document (unembedded fonts), logos, maps, graphs, and signatures < 300 ppi, clear and legible
EnergySolutions Technical Support Document RS-TD-313196-004, LACBWR Soil DCGL and Concrete BFM Dose Factors.	RS-TD-313196-004 Rev 0	Failed	Document contains scanned pages (unembedded fonts), logos, signatures, and graphs < 300 ppi, clear and legible
EnergySolutions LC QA-LTP-PL-001 Quality Assurance Project Plan LACBWR License Termination Plan (LTP) Development, Site Characterization and Final Radiation Survey Projects (QAPP).	LC-QA-LTP-PL-001, Rev. 0, LACBWR QAPP	Failed	Document contains scanned document (unembedded fonts), logos, maps, graphs, and signatures < 300 ppi, clear and legible
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Sheppard and Thibault, Default Soil/Solid /Liquid Partition Coefficients, Kds, for Four Major Soil Types: A Compendium, Health Physics, Vol. 59 No 4, October 1990.	Sheppard and Thibault Kd	Failed	Scanned pages (unembedded fonts)
Dairyland Power Cooperative (DPC), LACBWR Decommissioning Plan, Revision – November 2012.	2012 LACBWR DP and PSDAR Revision	Failed	Scanned pages (unembedded fonts)