WILLIAM L. BERG
President and CEO

DAIRYLAND POWER
COOPERATIVE

February 1, 2008

In reply, please refer to LAC-14023

DOCKET NO. 50-409

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555

SUBJECT: Dairyland Power Cooperative
La Crosse Boiling Water Reactor (LACBWR)
Possession-Only License No. DPR-45
Annual Report for 2007 - Report of Changes, Tests and Experiments

REFERENCES: (1) LACBWR Technical Specification, Section 6.5.1.1
(2) 10 CFR 50.59(d)(2)

In accordance with Reference 1, we are submitting the Annual Report covering the radiological exposure summary.

Also included are brief descriptions of facility changes, including summaries of evaluations, as required by Reference 2. No tests or experiments were conducted during 2007.

If there are any questions concerning this report, please contact us.

Sincerely,

DAIRYLAND POWER COOPERATIVE

William L Berg

William L. Berg, President & CEO

WLB: JBM: two

Enclosures

cc/enc: Kristina Banovac, NRC Project Manager
William Snell, NRC Region III
Peter Lee, Decommissioning Branch, NRC Region III

NMSS0/
IE56

FSME

La Crosse Boiling Water Reactor (LACBWR)

Possession-Only-License No. DPR-45

2007 ANNUAL REPORT

PERSONNEL EXPOSURE

AND

DESCRIPTION OF
CHANGES, TESTS, AND EXPERIMENTS

Dairyland Power Cooperative
3200 East Avenue South
La Crosse, WI 54602-0817

2007 Dose Distribution

Date: 01/11/2008

License No. DPR-45

Licensee: DAIRYLAND POWER COOPERATIVE

Affiliated Lic. No.:

Dose Range (rem)	Primary & Affiliated Licensee Records		All Records for Monitoring Year	
	Number of Individuals	TEDE Dose (person - rem)	Number of Individuals	TEDE Dose (person - rem)
No Meas. Exposure	44		44	
Meas. < .100	42	1.048	42	1.048
.100 - .250	13	1.851	13	1.851
.250 - .500	4	1.667	4	1.667
.500 - .750	9	5.466	9	5.466
.750 - 1.000	3	2.693	3	2.693
1.000 - 2.000	13	19.130	13	19.130
2.000 - 3.000	2	5.237	2	5.237
3.000 - 4.000				
4.000 - 5.000				
> 5.000				
Number with Meas. TEDE	86		86	
Total Monitored	130		130	
Total Collective TEDE		37.092		37.092
Total Collective CEDE		0.648		0.648

APPENDIX A

STANDARD FORMAT FOR REPORTING NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

2007	*Number of Personnel (>100 mRem)*			*Total Man-Rem*		
Work & Job Function	**Station Employees**	**Utility Employees**	**Contract Workers and Others**	**Station Employees**	**Utility Employees**	**Contract Workers and Others**
REACTOR SURVEILLANCE						
Maintenance Personnel	0	0	0	0.000	0.000	0.000
Operating Personnel	2	0	0	0.520	0.000	0.000
Health Physics Personnel	0	0	0	0.480	0.000	0.000
Supervisory Personnel	0	0	0	0.029	0.000	0.000
Engineering Personnel	0	0	0	0.000	0.000	0.008
ROUTINE MAINTENANCE						
Maintenance Personnel	0	0	0	0.829	0.000	0.000
Operating Personnel	0	0	0	0.000	0.000	0.000
Health Physics Personnel	0	0	0	0.000	0.000	0.000
Supervisory Personnel	0	0	0	0.000	0.000	0.000
Engineering Personnel	0	0	0	0.040	0.000	0.000
INSERVICE INSPECTION						
Maintenance Personnel	0	0	0	0.000	0.000	0.000
Operating Personnel	0	0	0	0.000	0.000	0.000
Health Physics Personnel	0	0	0	0.000	0.000	0.000
Supervisory Personnel	0	0	0	0.000	0.000	0.000
Engineering Personnel	0	0	0	0.000	0.000	0.000
SPECIAL MAINTENANCE						
Maintenance Personnel	0	0	0	0.829	0.000	0.000
Operating Personnel	0	0	0	0.000	0.000	0.000
Health Physics Personnel	0	0	0	0.000	0.000	0.000
Supervisory Personnel	0	0	0	0.000	0.000	0.000
Engineering Personnel	0	0	0	0.044	0.000	0.000

APPENDIX A - (cont'd)
2006

Work & Job Function	*Number of Personnel (>100 mRem)*			*Total Man-Rem*		
	Station Employees	**Utility Employees**	**Contract Workers and Others**	**Station Employees**	**Utility Employees**	**Contract Workers and Others**
WASTE PROCESSING						
Maintenance Personnel	7	0	27	8.632	0.000	16.456
Operating Personnel	3	0	0	0.378	0.000	0.000
Health Physics Personnel	4	0	0	3.138	0.000	1.509
Supervisory Personnel	0	0	0	0.067	0.000	3.257
Engineering Personnel	1	0	0	0.133	0.000	0.743
DEFUELING						
Maintenance Personnel	0	0	0	0.000	0.000	0.000
Operating Personnel	0	0	0	0.000	0.000	0.000
Health Physics Personnel	0	0	0	0.000	0.000	0.000
Supervisory Personnel	0	0	0	0.000	0.000	0.000
Engineering Personnel	0	0	0	0.000	0.000	0.000
TOTAL						
Maintenance Personnel	7	0	27	10.290	0.000	16.456
Operating Personnel	5	0	0	0.898	0.000	0.000
Health Physics Personnel	4	0	0	3.618	0.000	1.509
Supervisory Personnel	0	0	0	0.096	0.000	3.257
Engineering Personnel	1	0	0	0.217	0.000	0.751
GRAND TOTAL	17	0	27	15.119	0.000	21.973

MAXIMUM INDIVIDUAL DOSE DURING CALENDAR YEAR: 2.836 Rem (Mechanic)

DESCRIPTION OF CHANGES, TESTS, AND EXPERIMENTS

2007

FACILITY CHANGES

The following facility changes were physically completed in 2007. A summary of the evaluation of each, performed according to 10 CFR 50.59, is included. A determination was made that prior NRC approval was not required for these facility changes (FCs).

19-06-24 Train Well Door Control Configuration

The Turbine Building train well door, a roll-up type freight door, was originally installed with external pushbutton controls. These outdoor controls were disabled for security reasons during plant operation. Functionality of the outdoor controls for this freight door were re-installed to give needed convenience for door operation during Reactor Pressure Vessel (RPV) Removal Project activities. The 50.59 screen, prepared under the 10 CFR 50.59 review procedure, concluded that implementation of this facility change did not require prior NRC approval, that there was no need for any change to Technical Specifications, and that a 50.59 evaluation per the 10 CFR 50.59 review procedure was not required.

24-07-02 Modification to LACBWR Records Storage Facility

A fiber optic communications cable was installed through an existing floor opening in the Records Storage Room and connected to a distribution rack. The facility change documented the activity to ensure records storage facility and fire protection requirements were satisfied. The 50.59 screen, prepared under the 10 CFR 50.59 review procedure, concluded that implementation of this facility change did not require prior NRC approval, that there was no need for any change to Technical Specifications, and that a 50.59 evaluation per the 10 CFR 50.59 review procedure was not required.

25-05-11 Stack Siren Abandon in Place Pending Removal

The stack siren was removed from LACBWR emergency preparedness requirements under the 10 CFR 50.54(q) change process in 2005. This facility change electrically dismantled the siren in preparation for future physical removal. The 50.59 screen, prepared under the 10 CFR 50.59 review procedure, concluded that implementation of this facility change did not require prior NRC approval, that there was no need for any change to Technical Specifications, and that a 50.59 evaluation per the 10 CFR 50.59 review procedure was not required.

25-06-13 LACBWR Site Modifications and RPV Transportation Preparations

Various activities and documentation related to transport of the RPV package were gathered in this facility change. These activities included rail spur upgrade, heavy haul path modifications, RPV package grouting, and RPV package welding. Also documented were onsite transport, loading onto rail car of the RPV package, and rail transport of the package to ultimate burial. The 50.59 screen, prepared under the 10 CFR 50.59 review procedure, concluded that implementation of this facility change did not require prior NRC approval, that there was no need for any change to Technical Specifications, and that a 50.59 evaluation per the 10 CFR 50.59 review procedure was not required. NRC approval was obtained for 10 CFR 71.41(d) Special Package Authorization, Docket No. 71-9322, dated April 27, 2006, and revised December 15, 2006.

30-06-06 RPV Bottom Head Nozzle and Appurtenances Removal

Nozzles and appurtenances were removed in a series of cutting campaigns from the RPV bottom head. The following equipment connected to the RPV was physically cut and/or dismantled:

- 29 control rod nozzles
- 9 in-core flux monitoring nozzles
- 1 blow down nozzle
- 1 level indicator nozzle

The Control Rod Drive Mechanisms and nozzles were supported in place prior to and after cutting by a four-legged scaffold structure assembled in the Reactor Building (RB) sub-basement designed to support 40,000 lbs.; the anticipated load was 14,738 lbs. The cutting was accomplished by diamond wire saw. Work Instructions required that all cut locations, sequence of cutting, shoring, and other activities be performed in a manner that included support or restraint of the affected components to ensure stability.

Following nozzle removal, the RPV remained stable with lower support provided by the vessel support pads, or feet, bolted to the support ring on the foundation. Existing structural analysis documented in ARES Calculation No. 0526301.11-S-002 showed that the RB structure and the RPV in the "cut appurtenances configuration" were capable of withstanding the worst postulated seismic event at the LACBWR site and remain seismically qualified. The existing structural and seismic qualification analysis for the RPV in the cut-appurtenances condition remained applicable, since the presence of the appurtenances were not credited in the seismic analysis. As a commitment of the RPV Removal Project, a 50.59 evaluation was performed for this major activity. The 50.59 evaluation, prepared under the 10 CFR 50.59 review procedure, concluded that implementation of this facility change did not require prior NRC approval and that there was no need for any change to Technical Specifications.

30-06-07 Reactor Pressure Vessel Nozzle Removal

Nozzles and appurtenances attached to the RPV, above the bottom head, were removed in a series of cutting campaigns. The following equipment connected to the RPV was physically cut and/or dismantled:

- 2 steam outlet nozzles,
- 4 recirculation outlet nozzles,
- 4 recirculation inlet nozzles,
- 8 liquid level nozzles,
- 2 trunnions and 3 stabilizers on the side of the RPV were trimmed to less than the critical diameter of 119 inches.

The cutting was accomplished by diamond wire saw, torch cutting, and mechanical saw. Work Instructions required that all cut locations, sequence of cutting, shoring, and other activities be performed in a manner that included support or restraint of the affected components to ensure stability.

Following nozzle removal, the RPV remained stable with lower support provided by the vessel support pads, or feet, bolted to the support ring on the foundation. Existing structural analysis documented in ARES Calculation No. 0526301.11-S-002 showed that the RB structure and the RPV in the "cut appurtenances configuration" were capable of withstanding the worst postulated seismic event at the LACBWR site and remain seismically qualified. The existing structural and seismic qualification analysis for the RPV in the cut-appurtenances condition remained applicable, since the presence of the appurtenances were not credited in the seismic analysis. As a commitment of the RPV Removal Project, a 50.59 evaluation was performed for this major activity. The 50.59 evaluation, prepared under the 10 CFR 50.59 review procedure, concluded that implementation of this facility change did not require prior NRC approval and that there was no need for any change to Technical Specifications.

30-06-08 RPV Supports Disconnection, Lift and Transit

The grout-filled RPV weighing 370,000 lbs. was disconnected from its support, lifted 20', translated outside the RB, and placed upright into a staged steel cylindrical package.

(1) TLD Installed/Use Condition

With the Temporary Lifting Device (TLD) installed, the bounding structural condition analyzed was when the RPV was removed from the facility. The bounding conditions with the RB modifications to the RB wall and bio-shield were documented in ARES Calculation No. 0526301.11-S-002. This calculation concluded the comparison of maximum nodal displacements, absolute nodal accelerations, member shear forces, and moments showed that the results of the modified model were consistent with the behavior of the original model and the effects of the RPV removal and concrete cutting activities on loads on the walls of the RB shell, outer shield building, inner shield building were minor. All building components of the RB, particularly the FESW, were loaded by the RPV removal and concrete cutting activities to levels well within the available margins in the original design basis calculations. The bounding condition during RPV removal was when the TLD trolley with the RPV was located at the RB wall as analyzed in ARES Calculation No. 0526301.11-S-003. This calculation concluded that the modified RB wall, with an opening in the concrete and steel shell, was able to support the reaction loads imparted by the support girders during the RPV removal process and met the acceptance criteria defined in ARES Calculation No. 0526301.11-S-002.

(2) Bigge Lift Calculations

Bigge Calculation Nos. 2150-C10, 2150-C30, 2150-C50A, 2150-C50B, and 2150-CTLD Seismic show the structural analysis of the various elements that comprised the complete TLD system and the interfacing lift point to the RPV. These calculations demonstrated that the TLD system and the interfacing lift point were able to support the lifted load and met all acceptance criteria for each TLD element and interfacing lift point.

(3) Effect of TLD Structure on RB and Bio-Shield Seismic Response

Seismic analysis of the TLD structure for the LACBWR design basis SSE condition was performed and documented in ARES Calculation No. 0526301.11-S-008 for five bounding trolley positions and associated lift loads. The support reactions from these analyses were then evaluated on the RB wall, bio-shield/FESW walls, and outside RB frame support. ARES Calculation No. 0526301.11-S-003 used higher reaction loads in evaluating the RB wall than those obtained from the seismic analysis performed in ARES Calculation No. 0526301.11-S-008. ARES Calculation Nos. 0526301.11-S-002 and 0526301.11-S-007 evaluated the acceptability of the new TLD reaction loads obtained from ARES Calculation No. 0526301.11-S-008. The evaluation performed in ARES Calculation Nos. 0526301.11-S-002, 0526301.11-S-003, 0526301.11-S-007, and Bigge Calculation No. 2150-CTLD Seismic showed that the structural forces and reaction loads from the TLD seismic analysis documented in ARES Calculation No. 0526301.11-S-008 were acceptable. Local evaluation of the FESW structure performed in ARES Calculation No. 0526301.11-S-007 showed the TLD structure could be safely supported on the bio-shield/FESW wall at the 701' elevation for the purpose of removing the RPV.

As a commitment of the RPV Removal Project, a 50.59 evaluation was performed for this major activity. The 50.59 evaluation, prepared under the 10 CFR 50.59 review procedure, concluded that implementation of this facility change did not require prior NRC approval and that there was no need for any change to Technical Specifications.

30-06-09 RPV Package Fabrication

This facility change provided design specifications, material certification, and test documentation for fabrication of the 40' long, 11' diameter, two-piece, steel RPV package constructed by Brilex Industries, Inc., in Youngstown, OH. The 50.59 screen, prepared under the 10 CFR 50.59 review procedure, concluded that implementation of this facility change did not require prior NRC approval, that there was no need for any change to Technical Specifications, and that a 50.59 evaluation per the 10 CFR 50.59 review procedure was not required.

30-06-10 Trim Reactor Pressure Vessel Feet

The RPV was attached to its support structure by eight bolted support assemblies, or feet. The external thermal shield was installed after the RPV was bolted to the support structure. To allow clearance of the RPV during lift through the external thermal shield, corners of the RPV feet were trimmed by torch cutting. The 50.59 screen, prepared under the 10 CFR 50.59 review procedure, concluded that implementation of this facility change did not require prior NRC approval, that there was no need for any change to Technical Specifications, and that a 50.59 evaluation per the 10 CFR 50.59 review procedure was not required.

37-06-31 Biological Shield Cutting and Removal

Portions of the 701' floor and the bio-shield structure north of the RPV cavity were cut by diamond wire saw to create a corridor approximately 11 feet wide for removal of the RPV. The floor and support beam at the 701' level were cut and removed to allow access to the top of the bio-shield structure. The floor was shored as described in ARES Calculation No. 0526301.11-S-006. 4-inch diameter core drills for cutting wire access and 1½-inch diameter core drills for lifting/rigging were made in the floor first.

The corridor in the 4 to 6-feet thick bio-shield surrounding the RPV was cut and removed from elevation 701' to elevation 667'. The cutting produced blocks with dimensions and weights that were readily removed from the RB through the airlock. Bio-shield blocks were cut in single lifts starting at the top and working down. 4-inch diameter core drills for cutting wire access and 6-inch diameter core drills for lifting/rigging were made in the bio-shield first.

Lifting and removing floor and bio-shield blocks was accomplished using the existing Polar Crane and approved LACBWR procedures. No block was cut completely free from the floor or bio-shield structure unless the Polar Crane was rigged to the block. Work Instructions that controlled equipment use and work performance of the Bio-Shield Cutting and Removal were established to ensure minimal potential effect on the important to safety (ITS) SSCs including the FESW. All lifts inside the RB were NUREG-0612 compliant. Three calculations showed that the 701' floor and bio-shield cutting and removal could be accomplished such that the modified condition of the RB remained qualified to the original design requirements. The calculations concluded that the modified RB structure provided the same functional performance relative to SSCs maintained during SAFSTOR as provided prior to the modification.

1) Floor Loading

ARES Calculation No. 0526301.11-S-006 determined the shoring requirements and design for the RB 701' floor. Shoring was necessary to maintain the design basis floor loadings for certain floor areas, and to add supplemental support to the floor to compensate for structural strength compromised when a portion of the floor was cut and removed. The calculation provided the design details and analysis for each area that required shoring and determined that design loading of 500 psf at the 701' floor and 350 psf at the 667' floor were maintained except for a small triangular section of the 701' floor that is limited to 40 psf and controlled administratively. Limitation on floor loading in this small area does not affect the seismic response of the RB.

2) RB Seismic Analysis

ARES Calculation No. 0526301.11-S-002 showed the modifications made to the RB, bio-shield, and 701' floor had an insignificant effect on the behavior of the original seismic model and analysis of the facility. The comparison of maximum nodal displacements, absolute nodal accelerations, member shear forces, and moments showed that the results of the modified facility were consistent with the behavior of the original unmodified facility as shown in the calculation.

3) FESW Integrity

ARES Calculation No. 0526301.11-S-007 showed that modifications made to the RB, bio-shield, and 701' floor, did not affect the FESW ability to safely store spent fuel.

As a commitment of the RPV Removal Project, a 50.59 Evaluation was performed for this major activity. The 50.59 Evaluation, prepared under the 10 CFR 50.59 review procedure, concluded that implementation of this facility change did not require prior NRC approval and that there was no need for any change to Technical Specifications.

37-06-32 Reactor Building Modification

A keyhole shaped opening in the RB outer wall from elevation 726' to elevation 667' was created by diamond wire saw, cutting manageable sized blocks from the wall. The opening has a total length of 58'-8". The width of the upper 24'-8" of the opening is 16'-9¼" and the width of the lower 34' is 10'-6".

4-inch diameter core drills for cutting wire access and 6-inch diameter core drills for lifting/rigging were made first. Following the core drilling, the diamond wire was routed and the RB wall blocks were cut in single lifts starting at the top and working down. All core drilling and cutting activities took place from inside the RB. Rigging was accomplished using a mobile crane located on the ground outside the RB and no block was cut completely free from the RB structure unless the mobile crane was rigged to the block.

ARES Calculation Nos. 0526301.11-S-002 and 0526301.11-S-003 demonstrated that the modifications made to the RB had an insignificant effect on the behavior of the original seismic model of the facility, and that the shoulder areas of the RB opening were able to withstand the loads from the gantry system girders during RPV removal. The comparison of maximum nodal displacements, absolute nodal accelerations, member shear forces, and moments showed that the results of the modified facility were consistent with the behavior of the original unmodified facility as shown in ARES Calculation No. 0526301.11-S-002. As a commitment of the RPV Removal Project, a 50.59 evaluation was performed for this major activity. The 50.59 evaluation, prepared under the 10 CFR 50.59 review procedure, concluded that implementation of this facility change did not require prior NRC approval and that there was no need for any change to Technical Specifications.

37-06-33 TLD/Gantry System Install, Test and Disassembly

A Temporary Lifting Device/Gantry Rail System (TLD) was erected and installed inside and outside the RB. The TLD system consisted of a temporary runway structure and rolling trolley that incorporated hydraulic strand jacks for lifting the RPV. All TLD equipment was removed following RPV removal with the exception of two rocker bearing assemblies installed on the bio-shield at elevation 701' and two bearing assemblies mounted at the RB wall opening.

(1) Runway Structure Inside the RB

- Inside girders were installed in 37' spans on each side of the 701' floor cut opening. The girders were a fabricated plate steel box design with runway rails installed on the top flange. Each inside

box girder was supported at the south end by a rocker bearing assembly attached by bolts to the bio-shield structure, and at the north end by a cantilever bearing assembly attached to the end of the 74' outside girder sitting on the RB wall. The inside 37' girders did not bear directly on the 701' floor.

- The box girders used to support the TLD rail were from Bigge inventory and had existing bearing mounting plate extensions from the ends of the girder box structure. These extensions were not used in the RPV removal configuration; however, the southeast girder bearing extension did overhang the FESW by nine inches. The TLD rail, which was installed on top of the girder, did not overhang the FESW; therefore, the TLD rail-stop was located north of the FESW north wall. TLD travel for RPV removal was from the south to north direction.

- Each box girder had a runway rail travel stop limit mounted on the south end to prevent trolley movement beyond the end of the girders toward the FESW. The south end of the east girder was located at the edge of the FESW north wall. The south end of the west girder was approximately 3' from the FESW north wall. The girders ran away from the FESW with the load path centerline at 16.5 degrees east of the RB centerline north. Loaded trolley travel was away from the FESW.

- Girder support and restraint:

  - At the south end of the runway girders, vertical support, lateral restraint, and longitudinal restraint were provided for each girder by the rocker bearing assembly at the bio-shield/FESW wall.

  - Vertical support and lateral restraint were provided for each girder by the bearing assembly at the RB wall.

- The runway structure design inside the RB met NUREG-0612 criteria.

(2) Runway Structure Outside the RB

- The box girder sections outside the RB were 74' span. Each girder was supported by a bearing assembly located at the RB wall and by the bent structure at the north end of the runway.

- Each box girder had a runway rail travel stop limit mounted on the north end to prevent the trolley from rolling off the north end of the runway.

- The outside box girders extended approximately 2'-6" into the RB beyond the RB wall mounted bearing assembly. At this location the girders had a stepped web which accommodated a rocker bearing for the inside 37' girders to bear upon.

- Girder support and restraint:

  - Longitudinal restraint for the outside runway structure was provided by the previously described bio-shield/FESW mounted rocker bearings.

  - Lateral restraint for the north end of the outside 74' girders and support bent was provided by the counter weight structure located west of the support bent. Lateral restraint for the south end of the outside girders was provided by the bearing assemblies mounted on the RB wall.

- The runway structure design outside the RB was not required to meet NUREG-0612 criteria, as NUREG-0612 pertains to lifts and equipment inside buildings where spent fuel is stored.

(3) Trolley, Jacks, Rigging, and Fixtures

- The trolley was a moveable platform with four two-wheeled bogie end trucks (8 total double-flanged wheels) designed to run on the box girder rails. Two of the trucks had electric mechanical drives. Each drive consisted of a gearbox, motor, and brake. There were two driven/braked wheels in the 8-wheel set. The brake was automatically set when the momentary directional motion switch was released to the neutral position.

- The trolley had two travel speeds; 1.62 feet per minute (FPM) and 6.80 FPM. Both travel speeds were very slow. At the slower speed, it would have taken over an hour to traverse the runway from south to north.

- Two hydraulic strand jack hoisting systems were mounted on top of a trolley platform. The strand jack systems were independent from each other and were specially fabricated to meet the specifications for the LACBWR RPV lift and transport. Hoisting speed was 0.5 FPM.

- The strand jacks were comprised of 36 strands per jack; failure of any given strand would not result in loss of control of the suspended load. Failure of over 75% of the strands would have had to occur before the remaining strands could not carry the load.

- Two separate electrical sources were used to power the two strand jack power packs and one trolley drive system through three dedicated load disconnect switches. The strand jack system was designed such that the load would remain secured at the height lifted upon loss of power or hydraulic pressure.

- Emergency power disconnect switches, located separately from the operator station for each strand jack hydraulic power pack and trolley drive, were provided to remotely stop the systems in the event of a hydraulic spray leak or other off normal condition.

- The trolley assembly was designed to meet NUREG-0612 criteria.

(4) Load Testing

The TLD was constructed of components within the Bigge equipment inventory along with new fabricated assemblies. Prior to TLD use for the RPV lift, a load test of 110% of the load lifted outside the RB (service load 639,000 lbs/test load 703,000 lbs) was conducted. Since a load test of 150% of the load lifted inside the RB (service load 380,000 lbs/test load 570,000 lbs) was less than the outside load test weight, the inside load test was not performed. The percent increases above static weight or service load were consistent with NQA-1 and ANSI N14.6. The custom-built handling fixture attached to the RPV was load tested in accordance with ANSI N14.6-1993, Section 7, "Special lifting devices for critical loads." Section 7.3.1(a) required the test load to be three times (3x) the weight the fixture would support. The handling fixture load test was documented for record.

As a commitment of the RPV Removal Project, a 50.59 evaluation was performed for this major activity. The 50.59 evaluation, prepared under the 10 CFR 50.59 review procedure, concluded that implementation of this facility change did not require prior NRC approval and that there was no need for any change to Technical Specifications.

37-06-34 Reactor Building Restoration Activities

The approximately 760 square-foot opening in the RB was covered by a custom fabricated bi-parting door shortly after the RB opening was made. The door complies with Bigge Document No. 2150-D1, and the door panels are designed to withstand a 25-psf Exposure "B" wind load. The original RB wall design external wind load was 20 psf. The door is held in position by an engineered mounting frame, welded to

the steel shell at the RB wall opening, designed to withstand SSE level seismic loads. The door sections were lifted into place by a mobile crane located outside the RB. Door design includes windlocks installed in the door slats that engage the steel channels at wind loads greater than 25 psf. The insulated door has a comparable thermal resistance (R-value) to that of the insulated steel and concrete RB wall. The drum and operating motor for the upper section are protected from the elements by a sloped steel and siding roof shelter. This shed roof structure is designed to withstand 40-psf snow load. A box enclosure protects the drum and operating motor of the lower section. Vinyl weather stripping and exterior siding finishes ensure weather tight integrity of the door system. The door was capable of being closed with or without TLD gantry beams installed through the RB opening. Door operation is controlled by an approved LACBWR procedure. As a commitment of the RPV Removal Project, a 50.59 evaluation was performed for this major activity. The 50.59 evaluation, prepared under the 10 CFR 50.59 review procedure, concluded that implementation of this facility change did not require prior NRC approval and that there was no need for any change to Technical Specifications.

37-06-35 50/5 Ton Polar Crane Runway Restoration

The Polar Crane is a traveling bridge crane with a 50-ton main hoist and a 5-ton auxiliary hoist located within the upper portion of the RB at the 729'-6" elevation. The bridge completely spans the building and travels on circular tracks supported by 20 columns around the inside of the building just below the hemispherical dome. A single trolley containing all the lifting mechanisms travels on the bridge to permit hook coverage to any position on the main floor under the trolley travel diameter. The lifting cables of both the 50-ton and 5-ton hoists are long enough to reach down through hatchways into the basement area. An alternative Polar Crane runway structure support was installed to replace a W14x43 runway support column removed to create a RPV load out path from the RB. The Polar Crane bridge, hoists, and lifting equipment were not modified.

Structural reinforcement was installed in the region above where the opening in the RB wall was cut. The installation structurally reinforced the location above the opening in the outer RB shield wall to maintain the design capacity of the Polar Crane. The existing Polar Crane runway column support bracket in the outer RB shield wall was reinforced as described below:

(1) An interface plate, 42" x 42" x ½", stiffened with L4" x 4" x ½", was welded to the Polar Crane support bracket and the RB outer steel shell.

(2) The outer shield wall concrete section, directly above the RB opening cut, was tied to the RB outer steel shell by through-bolting.

ARES Calculation No. 0526301.11-S-005 demonstrated that structural reinforcement of the RB maintained the Polar Crane at its design capacity of 50 tons following removal of one crane girder support column, and minimal trimming on crane girder support columns at either side of the RB opening. As a commitment of the RPV Removal Project, a 50.59 evaluation was performed for this major activity. The 50.59 evaluation, prepared under the 10 CFR 50.59 review procedure, concluded that implementation of this facility change did not require prior NRC approval and that there was no need for any change to Technical Specifications.

37-06-36 Reactor Building Paint Abatement

The original paint applied to the inside RB wall concrete and bio-shield concrete was lead-based and contained PCBs. In accordance with OSHA and EPA regulations paint was abated prior to RB wall modifications and bio-shield cutting. Paint was abated from cut lines and core drill locations using a contained sand-blasting method. The 50.59 screen, prepared under the 10 CFR 50.59 review procedure, concluded that implementation of this facility change did not require prior NRC approval, that there was no need for any change to Technical Specifications, and that a 50.59 evaluation per the 10 CFR 50.59 review procedure was not required.

37-06-37 Girder Support Installation at Reactor Building Wall

Bearing assemblies were installed on the 701' elevation east and west shoulders of the RB wall opening to provide vertical support and lateral restraint for the two box girders of the TLD/gantry crane runway structure. The bearing assemblies transferred load to the RB wall which is comprised of 9" concrete and a 1-¼" exterior plate steel shell. FC 37-06-33, described previously, provided evaluation for this modification supported by structural analysis in ARES Calculation No. 0526301.11-S-003. This calculation concluded that the modified RB wall, with an opening in the concrete and steel shell, would be able to support the reaction loads imparted by the support girders during the RPV removal process and would meet the acceptance criteria defined in ARES Calculation No. 0526301.11-S-002. The 50.59 screen, prepared under the 10 CFR 50.59 review procedure, concluded that implementation of this facility change did not require prior NRC approval, that there was no need for any change to Technical Specifications, and that a 50.59 evaluation per the 10 CFR 50.59 review procedure was not required.

50-07-23 Lower Cavity Forced Circulation Pipe Removal

Following RPV removal, sections of forced circulation pipe within the bio-shield lower cavity was sectioned and disposed of as Class A waste. This piping removal was in preparation for RB modifications to support the Dry Cask Storage Project. The 50.59 screen, prepared under the 10 CFR 50.59 review procedure, concluded that implementation of this facility change did not require prior NRC approval, that there was no need for any change to Technical Specifications, and that a 50.59 evaluation per the 10 CFR 50.59 review procedure was not required.

74-05-77 Reroute Electrical Cables in Reactor Building

A small number of electrical cables contained in two cable trays were rerouted to clear obstruction to RPV removal. The 50.59 screen, prepared under the 10 CFR 50.59 review procedure, concluded that implementation of this facility change did not require prior NRC approval, that there was no need for any change to Technical Specifications, and that a 50.59 evaluation per the 10 CFR 50.59 review procedure was not required.

77-07-01 Remove 1B LPSW Pump Lower Seal Supply

1B Low Pressure Service Water (LPSW) Pump was reconditioned. The new lower pump seal installed no longer requires a supply of seal water as did the original. The 50.59 screen, prepared under the 10 CFR 50.59 review procedure, concluded that implementation of this facility change did not require prior NRC approval, that there was no need for any change to Technical Specifications, and that a 50.59 evaluation per the 10 CFR 50.59 review procedure was not required.

87-06-26 LACBWR OCA & LSE Gate Installation/Replacement

The Genoa Site Owner-Controlled Area (OCA) motor-operated gate failed and was replaced. The motor-operator on the LACBWR Site Enclosure (LSE) gate failed. This east LSE gate was replaced by a two-section manual gate. A second two-section manual gate was added to allow LSE access from the north. The 50.59 screen, prepared under the 10 CFR 50.59 review procedure, concluded that implementation of this facility change did not require prior NRC approval, that there was no need for any change to Technical Specifications, and that a 50.59 evaluation per the 10 CFR 50.59 review procedure was not required.

91-07-06 Replace 1A LPSW Pump

1A LPSW Pump failed. The original 2400-V AC, 3000-gpm, 150-hp pump was replaced by a new cost effective 480-V AC, 500-gpm, 25-hp pump. The 50.59 screen, prepared under the 10 CFR 50.59 review procedure, concluded that implementation of this facility change did not require prior NRC approval, that there was no need for any change to Technical Specifications, and that a 50.59 evaluation per the 10 CFR 50.59 review procedure was not required.

TESTS

There were no tests conducted during 2007.

EXPERIMENTS

There were no experiments conducted during 2007.

REFERENCES

RPV Removal Project work was performed under nine major Facility Changes for which 50.59 Evaluations were conducted. Calculations and analyses in support of the conclusions of these 50.59 Evaluations are listed below:

(1) ARES Calculation No. 0526301.11-S-001, "Regeneration of LACBWR 1982 Containment Building Model for Seismic and Structural Analysis," Rev. 0.

(2) ARES Calculation No. 0526301.11-S-002, "Seismic Analysis of Modified LACBWR Containment Building with SAP2000," Rev. 1.

(3) ARES Calculation No. 0526301.11-S-003, "Structural Analysis of LACBWR Modified Containment Building Outer Shield Wall to Support Crane Girder Loads During RPV Removal," Rev. 1.

(4) ARES Calculation No. 0526301.11-S-005, "Structural Reinforcing of the Containment Building Outer Shield Wall Opening to Maintain Polar Crane Capacity," Rev. 0.

(5) ARES Calculation No. 0526301.11-S-006, "Structural Analysis for Shoring of Floor at El. 701' Due to Concrete Cutting Inside the Reactor Building," Rev. 0.

(6) ARES Calculation No. 0526301.11-S-007, "Structural Integrity Analysis of Spent Fuel Storage Well and Racks Inside the Reactor Building," Rev. 1.

(7) ARES Calculation No. 0526301.11-S-008, "Seismic Analysis of LACBWR's Temporary Lifting Device (TLD) Structure for Removing RPV from the Reactor Building," Rev. 0.

(8) ARES Calculation No. 0526301.12-S-001, "Structural Analysis of Support Reinforcement for Bi-Parting Door at Containment Building Opening," Rev. 0.

(9) ARES Report No. 0526301.11-002, "Phase 2, LACBWR Reactor Pressure Vessel Removal Structural Analysis and Design Criteria," Rev. 0.

(10) Bigge Document 2150-D1, "Engineering Design Basis, Engineering, Rigging and Onsite Transport Services, Phase 2 – Reactor Pressure Vessel Removal Project, La Crosse Boiling Water Reactor Nuclear Plant," April 26, 2007, Rev. 2.

(11) Bigge Calculation No. 2150-C10, "Strand Jack Trolley Adequacy," Rev. 1.

(12) Bigge Calculation No. 2150-C30, "TLD Runway Structure," Rev. 2.

(13) Bigge Calculation No. 2150-C50A, "RPV Lift Lug and Miscellaneous Hook Rigging," Rev. 0.

(14) Bigge Calculation No. 2150-C50B, "RPV Head Adequacy," Rev. 0.

(15) Bigge Calculation No. 2150-CTLD Seismic, "TLD Runway & Trolley Structure Seismic," Rev. 0.