WOLF CREEK
NUCLEAR OPERATING CORPORATION

April 17, 2013

Michael J. Westman
Manager Regulatory Affairs

RA 13-0051

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

Subject: Docket No. 50-482: 2012 Annual Environmental Operating Report

Gentlemen:

The purpose of this letter is to submit the enclosed Annual Environmental Operating Report, which is being submitted pursuant to Wolf Creek Generating Station (WCGS) Renewed Facility Operating License NPF-42, Appendix B, "Environmental Protection Plan." This report covers the operation of WCGS for the period of January 1, 2012, through December 31, 2012.

This letter contains no commitments. If you have any questions concerning this matter, please contact me at (620) 364-8831 ext. 4009, or Mr. William Muilenburg at (620) 364-8831, ext. 4511.

Sincerely,

Michael J. Westman

MJW/rlt

Enclosure: 2012 Annual Environmental Operating Report (12 pages)

cc: A. T. Howell (NRC), w/e
C. F. Lyon (NRC), w/e
N. F. O'Keefe (NRC), w/e
Senior Resident Inspector (NRC), w/e

IE25
NRR

WOLF CREEK GENERATING STATION

ANNUAL ENVIRONMENTAL OPERATING REPORT

2012

ENVIRONMENTAL MANAGEMENT ORGANIZATION

WOLF CREEK NUCLEAR OPERATING CORPORATION

P.O. BOX 411

BURLINGTON, KANSAS 66839

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1.0 INTRODUCTION

The 2012 Annual Environmental Operating Report is being submitted in accordance with the objectives of the Environmental Protection Plan (EPP), Appendix B to the Facility Operating License NPF-42. The purpose of this report is to demonstrate that the Wolf Creek Generating Station (WCGS) operated during 2012 in a manner protective of the environment.

2.0 ENVIRONMENTAL MONITORING

2.1 AQUATIC [EPP Section 2.1]

2.1.1 Impacts of Water Withdrawal on the Neosho River

There were no adverse impacts to the Neosho River due to water-use conflicts because river flows downstream of the makeup pumps were maintained during 2012. The WCGS Final Environmental Statement/Operating License Stage (FES/OLS, Section 5.6), NUREG-0878, postulated that makeup water withdrawal of 41 cubic feet per second (cfs) during drought conditions would extend the duration and severity of low-flow conditions below John Redmond Reservoir (JRR). This, in turn, was expected to reduce riffle habitat that would adversely affect the Neosho madtom, a federally listed threatened species.

Actual makeup water withdrawals during 2012 are summarized as follows:

Source	Period	Duration (days)	Average Pump Rate (cfs)	Average River Flow at Pump (cfs) [1]
Neosho River [2]	3/8 to 3/21/12	14	108	755
JRR Storage	5/23 to 6/13/12	22	111	165
	7/18 to 10/17/12	92	82	135

(1) Flow measured at JRR spillway discharge.

(2) Before natural flows from the Neosho River are permitted by the Kansas Department of Agriculture, Division of Water Resources to be pumped, a 250 cfs minimum must be maintained downstream of the pumps.

As shown above, average pump rates were less than average river flows measured at the JRR spillway, immediately upstream of the pumps at the Makeup Water Screenhouse (MUSH). This demonstrates that downstream flows were maintained. Average flows downstream of the MUSH were 647, 54, and 53 cfs for each pumping period respectively.

For comparison purposes, the 41 cfs assessed in the FES/OLS refers to a continuous annual average from JRR storage. Combining the three pumping periods, the actual 2012 pumping from JRR storage averaged 85 cfs for 128 days, which was equivalent to 30 cfs, when calculated on a similar, annual basis.

This flow rate was lower than the 41 cfs evaluated as impacting the Neosho River during drought conditions.

Consequently, makeup pumping activities did not impact flows intended to maintain minimum desirable stream flows in the Neosho River, and no adverse impacts due to water-use conflicts occurred during 2012.

2.1.2 Oxidizing Biocide Discharges to Coffey County Lake (CCL)

Circulating Water System (CWS) Discharge:

There were no adverse impacts observed due to biocides during 2012. Biocide use at WCGS was predicted to cause periodic, appreciable mortality in a conservatively estimated 40 acres of the discharge area to CCL. However, these impacts were not expected to meaningfully affect the overall biological productivity of the lake (FES/OLS, Section 5.5.2.2). The postulated biocide levels expected to cause the impacts were from 0.68 to 1.08 mg/l of total residual chlorine at the CWS discharge (FES/OLS, Section 4.2.6.1).

Actual biocide use during 2012 averaged 0.06 mg/l total residual oxidant (TRO). This level was much lower than those evaluated in the FES/OLS, thus impacts were considered to be correspondingly less. The Kansas Department of Health and Environment (KDHE) also requires, through the WCGS National Pollutant Discharge Elimination System (NPDES) permit, that biocide discharges for the CWS be less than 0.2 mg/l TRO, for a maximum of two hours per day. These requirements were not exceeded during 2012. Consequently, biocide impacts to CCL have been less than initially evaluated in the FES/OLS, and NPDES compliance assures that this will continue.

Essential Service Water System (ESWS) Discharge:

Flow from the WCGS Service Water System (SWS) diverted through the Essential Service Water System (ESWS) was completed to provide microbiologically induced corrosion protection and sedimentation control. The KDHE established a 1.0 mg/l TRO limit for the SWS diversion through the ESWS. Actual measurements of TRO averaged 0.20 mg/l, and compliance with the NPDES limit in 2012 was 100 percent. Based on this information, permitted biocide discharges did not have appreciable effects on the cooling lake environment.

2.1.3 Cold Shock

In the event of a rapid decline in plant power level during winter, fish attracted to the WCGS heated discharge could experience mortality due to a quick reduction in body temperature (cold shock). In reference to licensing document evaluations, the WCGS EPP Section 2.1 (c) states, "Cold shock effects on fish due to reactor shutdowns could cause significant mortality to aquatic species in the cooling lake."

Fish mortality due to cold shock was not observed in CCL following declines in plant power level. Two such plant shutdowns or power level decreases occurred as follows:

Date	Duration
1/13/12 to 3/27/12	73 days, 18 hrs
7/1/12 to 7/2/12	19 hrs

Fish mortality was not observed following the plant power changes. Consequently, significant impact to the fishery in CCL due to cold shock events did not occur.

2.1.4 Impingement and Entrainment

Impacts of entrainment and impingement of fish and aquatic organisms due to WCGS cooling water pumping were projected to be significant, as indicated in the WCGS EPP, Section 2.1 (d). EPP Section 2.1 states that the NRC relies on the State of Kansas for determination of the need for monitoring entrainment and impingement impacts. The KDHE requested WCGS to monitor impingement impacts for the Clean Water Act (CWA) 316 (b), Phase II regulations. This monitoring has been completed, and results have been submitted to the KDHE. Entrainment monitoring has not been required. No significant adverse impacts to the CCL fishery were identified because of impingement. Fishery management at WCGS has succeeded in controlling impingement, and minimizes potential impacts of impingement to the fishery.

2.1.5 Impacts of Coffey County Lake Discharges to the Neosho River

The WCGS NPDES permit requires that CCL discharges be sampled on the first day of each discharge and weekly thereafter until the end of each respective discharge. A discharge limit was set for pH (NPDES Outfall 004). Lake discharges typically can occur at the Blowdown Spillway and Service Spillway. During 2012, no discharges occurred at the Blowdown Spillway. There were no NPDES violations from discharges from the Service Spillway, and no detrimental effects were expected to the Neosho River water quality.

2.2 TERRESTRIAL [EPP Section 2.2]

2.2.1 Control of Vegetation in the Exclusion Zone

The composition and structure of vegetation in the 453 hectare (1120 acre) exclusion zone were selectively controlled to be compatible with the function and security of station facilities. Most areas in the immediate vicinity of the power block have been planted and maintained in a lawn-type condition. Other areas within the exclusion area have been mowed for security and aesthetic purposes. Tree and brush control occurred in some areas. There were no significant changes in overall vegetation management of the exclusion zone during 2012.

2.2.2 Vegetation Buffer Zone Surrounding Coffey County Lake

To create a buffer zone of at least 500 acres around CCL, as specified in EPP Section 2.2 (b), agricultural production activities were curtailed in 1980 within a border ranging from approximately 200-400 feet adjacent to the lake shoreline. This area is approximately 1440 acres. Previously grazed or hayed native grass areas were left undisturbed. Previously cultivated lands were allowed to advance through natural succession stages, or native grasses were established in these areas. Land management activities included controlled burning to enhance and/or maintain the designated buffer zone with a naturally occurring biotic community.

2.2.3 Herbicide Use for Maintenance of WCGS Structures

Herbicides were used on transmission corridors, gravel areas, railroad easements, and various land areas associated with WCGS. Application rates followed label instructions. All herbicides used were registered by the Kansas Department of Agriculture when purchased. No environmental impacts from herbicide treatment of WCGS facilities were identified. A summary of herbicide application is provided below.

The transmission lines associated with WCGS include the Wolf Creek-Rose Hill and a small portion of the Wolf Creek-Benton and Wolf Creek-La Cygne lines. Herbicide treatment of the Wolf Creek-La Cygne corridor was completed during 2012. Herbicides included a mix of Tordon K (EPA Reg No 62719-17), Garlon 3A (EPA Reg No 62719-37), and Escort (EPA Reg No 352-439). In areas adjacent to water bodies, a mix of Habitat (EPA Reg No 241-426) and Accord (EPA Reg No 62719-517) was used.

In areas where bare-ground control was desired, Karmex DF (EPA Reg. No 352-508), Oust (EPA Reg. No. 352-401), or Sahara DG (EPA Reg. No. 241-372) herbicides were used. Roundup Ultra (EPA Reg. No 524-475), or comparable substitute, was also used for problem weed areas. These herbicides were used on various gravel areas, including the switchyard, protected area boundary, meteorological tower, storage tank berms, railroad beds, and storage yards.

Noxious weed and nuisance tree/brush growth were controlled with Tordon RTU (EPA Reg. No. 62719-31), Remedy (EPA Reg. No. 62719-70), Weed Pro 2,4-D (EPA Reg. No. 10107-31), and Roundup Ultra. Areas treated included the dam, railroad easements, and selected grassland areas around the cooling lake.

2.2.4 Waterfowl Disease Contingency Plan and Monitoring

A waterfowl disease contingency plan was maintained to provide guidance for station biologists in the event of suspected or actual disease outbreaks. The contingency plan lists appropriate federal and state wildlife agency contacts to be made by Wolf Creek Nuclear Operating Corporation (WCNOC) in the event of such problems. During routine environmental monitoring and surveillance activities taking place over this reporting period, no waterfowl mortality attributable to disease pathogens was identified.

2.2.5 Fog Monitoring Program [EPP Subsection 4.2.1]

Fog monitoring concluded that operation of WCGS did not appreciably increase fogging incidents from that measured before operation. Visibility monitoring was initiated in December, 1983, and continued through 1987. The purpose of this study was to evaluate the impact of waste heat dissipation from CCL on fog occurrence along U.S. 75 near New Strawn, Kansas. The program was required through one year of commercial operation that started in September 1985. Upon conclusion of 1987 data collection, sufficient information was available to evaluate cooling lake fogging, and all commitments relevant to fog monitoring had been satisfied.

During 2012, there were no reports of fogging incidents in the vicinity of nearby U.S. 75 from individuals or local agencies responsible for traffic safety. Periodic fogging likely caused by the cooling lake did occur during the winter months of 2012, but was restricted to the plant site and immediate vicinity of the lake. No mitigation actions or further monitoring were warranted.

2.2.6 Wildlife Monitoring Program [EPP Subsection 4.2.2]

A wildlife monitoring program was initiated in 1982 to monitor and assess waterfowl, waterbird, and bald eagle usage of CCL. This program included transmission line collision surveys to assess collision mortality and determine potential mitigation needs. This wildlife monitoring program was to continue for at least two years following WCGS start-up (FES-OLS Section 5.5.1.2), which occurred in September 1985. Transmission line surveys were conducted from 1983 through 1988. Monitoring of lake use by waterfowl, waterbirds, and bald eagles continued through 1996. By then, sufficient data had been collected to determine waterfowl, waterbird, and bald eagle usage of CCL. Consequently, the scope of the wildlife monitoring program was reduced. The current program consists of reviewing CCL waterfowl and bald eagle survey data collected by the Kansas Department of Wildlife, Parks and Tourism (KDWPT). If review of the KDWPT's data indicates that usage has increased from that previously documented, then additional monitoring may be initiated if warranted. Any such additional monitoring may include collision mortality monitoring.

Review of waterfowl and bald eagle monitoring data from the KDWPT indicate that waterfowl and waterbird usage was consistent with past years. Increased transmission line collision potential was not indicated. No disease outbreaks or widespread crop depredation attributable to waterfowl use of CCL were observed. No changes to the wildlife monitoring program were warranted.

2.2.7 Land Management Program [EPP Subsection 4.2.3]

Land management activities on all company-owned lands except within the 453 hectare (1120 acre) WCGS exclusion area were designed to achieve balances between agricultural production and conservation values. An annual management plan addressed needs and accepted techniques for land maintenance, soil conservation, and wildlife management. These included the repair or construction of soil conservation structures, wetland areas, and permanent vegetative covers. An environmental education area was improved and maintained as part of the land management program. The land management program continued to balance agriculture production and conservation values.

3.0 ENVIRONMENTAL PROTECTION PLAN REPORTING REQUIREMENTS

3.1 PLANT DESIGN OR OPERATION CHANGES [EPP Section 3.1]

Plant design or operational changes were evaluated for potential significant affects to the environment, the presence of which would constitute an unreviewed environmental question (UEQ) per the EPP. Evaluations completed during 2012 demonstrate that significant impacts to the environment would not occur, and that no changes constituted a UEQ. Below are brief descriptions of these evaluations completed in 2012.

1. Diesel Fire Pump Replacement

   Replacement of the diesel fire pump was evaluated and determined not to involve a UEQ. This change also involved installation of a new backup jockey fire pump taking suction directly from the lake. All activities were within the Circulating Water Screenhouse (CWSH). Environmental interfaces included air emission source permitting, aboveground storage tank requirements, and Spill Prevention Control and Countermeasure (SPCC) plan updating. Necessary review and permitting from the State of Kansas were completed. Consequently, a UEQ did not exist.

2. Welding Shop Office and Calibration Lab Remodel

   Remodeling of the Welding Shop Office and Calibration Lab was evaluated and it was determined that a UEQ was not involved. Refrigerant management requirements for new air conditioner units were addressed. Solid waste management and asbestos handling requirements were identified. All environmental interfaces were accounted for, thus a UEQ did not exist.

3. Turbine Controls System Modification

   Modifications to the Turbine Controls System were evaluated and a UEQ was not identified. The changes increased the cooling load in the Electro-Hydraulic Control cabinet room, thus two new air conditioning units were necessary. The new units used refrigerants compliant with U.S. Environmental Protection Agency requirements. Internal refrigerant management system guidelines were identified. All environmental interfaces were accounted for, thus a UEQ did not exist.

4. Temporary Office Trailer Installation

   The installation of multiple temporary office trailers, and associated utilities and parking lots, were evaluated and found not to involve a UEQ. These temporary office trailers were necessary to support increasing plant maintenance activities on site. Environmental interfaces included grubbing and exposing erodible soils necessitating preparation of Storm-water Pollution Prevention Plans (SWPPP). Best management practices identified in the plans were installed and maintained. Exposed soils were within areas previously disturbed by site construction. As a result of these protective measures, environmental impacts were not likely, thus a UEQ was not present.

5. Groundwater Monitoring Well Relocation

   Relocation of four existing groundwater monitoring wells was evaluated and a UEQ was not identified. The scope involved plugging four existing and drilling four new monitoring wells compliant with State of Kansas regulations. All well locations were within areas previously disturbed by site construction. Temporary air emission source requirements were accounted for. Consequently, a UEQ was not present.

6. Corrosion Inhibitor Change

   Replacing the corrosion inhibitor Cuprostat with 3D Trasar 3DT197 was evaluated and a UEQ was not identified. The corrosion inhibitor for the SWS and ESWS was similar to the existing treatment chemical. Approval was requested and obtained from the KDHE. Internal chemical control requirements to ensure safety and Superfund Amendments and Reauthorization (SARA) tracking were completed. Consequently, a UEQ was not present.

7. ESWS Piping Replacement Project

   Multiple evaluations were completed for portions of the ESWS piping replacement project, and a UEQ was not identified. The portions evaluated included demolition and construction of structures, standby power systems, duct banks, buried conduits, cables at the ESWS pump house. Vault construction and trenching for upland portions of the new buried discharge piping were also evaluated.

All activities were within areas previously disturbed by plant construction. A SWPPP was drafted with best management practices identified and implemented to protect water quality. Tracking of temporary air emission sources were accounted for. Permitting for a new permanent air emission source was requested and received from the KDHE. Necessary SPCC updates and SARA tracking needs were identified. Refrigerant management program updates were accounted for. All regulatory aspects protective of the environment were identified, thus a UEQ was not present.

8. Cable Replacement

   Cable replacement within the plant was evaluated, and no UEQ was identified. The project involved removing and replacing cabling within existing raceways. Tracking of a temporary air emission source was required. No UEQ was present.

9. Non-safety Auxiliary Feedwater Pump Electrical Design

   The electrical design portion of the new Non-safety Auxiliary Feedwater Pump was evaluated, and a UEQ was not present. Tracking of temporary air emission sources was accounted for. Permanent air emission source and above ground storage tank permitting requirements were identified. SWPPP and SPCC changes were captured. Consequently, a UEQ would not result from this project.

3.2 NON-ROUTINE ENVIRONMENTAL REPORTS [EPP Section 5.4.2]

3.2.1 Submitted Non-routine Reports

There were no environmental reports involving significant non-routine impacts submitted to the NRC during 2012.

3.2.2 Unusual or Important Environmental Event Evaluations [EPP Section 4.1]

No unusual or important environmental events that indicated or resulted in a significant environmental impact related to plant operations occurred during 2012.

4.0 SUMMARY OF ENVIRONMENTAL INVESTIGATIONS AT WOLF CREEK GENERATING STATION

4.1 2012 LAND MANAGEMENT ACTIVITIES

The WCGS Land Management Program achieved a balance of production and conservation values as required in EPP, Section 4.2.3. Beyond regulatory compliance, the program reflected WCNOC's dedication to proper stewardship of the natural resources.

The objectives of the Land Management Program were:

1. to conserve and/or improve both agricultural and natural resources;
2. to foster positive relationships with local agricultural and natural resource communities;
3. to enhance, for educational purposes, the natural resources on an Environmental Education Area;
4. to meet license requirements;
5. to maintain rent income at maximum levels while placing the higher priority on the above objectives.

Areas around the CCL shoreline were maintained in a naturally occurring biotic community to comply with Section 2.2(b) of the EPP. Some land areas have been maintained as wildlife habitat or reserved for educational purposes. The remainder of the land has been leased for grazing, hay, and crop production.

4.2. 2012 ZEBRA MUSSEL MONITORING ACTIVITIES

Zebra mussel veligers were confirmed in plankton samples taken from CCL at the CWSH on June 27, 2012. This indicated that a reproducing population was likely within CCL. Subsequent substrate searches found attached adults in the vicinity of the Makeup Discharge Structure (MUDS) and main dam. The largest size found was approximately 0.5", with >90% being <0.25". These sizes were consistent with introduction via makeup water pumping from the Neosho River during the fall of 2011 and spring 2012.

2012 Zebra mussel monitoring within CCL focused on two areas. First, a diverse array of detection methods was employed to determine presence or absence. Second, benchmark data was collected on water quality and aquatic vegetation to assess secondary impacts to the lake and WCGS from zebra mussel establishment.

Plankton sampling was completed until veligers were confirmed on June 27, 2012. Shoreline/substrate searches, scrapes and settlement monitor inspections were completed in CCL until adult zebra mussels were found on July 11, 2012. Boat inspections and treatment for zebra mussels were completed at the lake access park until zebra mussels were confirmed.

Secondary impacts to CCL and WCGS potentially resulting from zebra mussel presence could include increases in water clarity, and subsequent promotion of aquatic vegetation growth. Water clarity was measured using a secchi disc technique with results ranging from 0.6 to 2.4 meters, and averaging 1.3 meters. Water clarity in 2012 will be considered baseline, and indicative of initial zebra mussel expansion in CCL. Concurrent with secchi measurement, vegetation was surveyed, with no significant vegetation beds observed.

4.3 2012 FISHERY MONITORING ACTIVITIES

Fishery monitoring activities on CCL documented long-term trends and demonstrated that the fishery functioned as desired through 2012. Fish predation pressure on the gizzard shad population continued to prevent excessive shad impingement problems at the circulating water intake. Public angling on the lake did not impact the fishery's function of supporting plant operations. The catch and release philosophy promoted when the lake was opened for the public has been compatible with gizzard shad control objectives.