



Nebraska Public Power District

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NSD930612
May 28, 1993

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

Gentlemen:

Subject: Fourth Year Deposit to External Decommissioning Fund
Cooper Nuclear Station
NRC Docket No. 50-298, DPR-46

The Nuclear Regulatory Commission (the "NRC") published, in the Federal Register to 10 CFR Part 50 (53 FR 24018) dated June 27, 1988, a final rule specifying the requirements for the decommissioning of electrical utility nuclear generating facilities. The Nebraska Public Power District (the "District") has submitted its Decommissioning Funding Plan (the "Plan"), associated Trust Agreement, and Agreement for Investment Management Services on June 13, 1990. These documents satisfy the requirements of NRC Regulation 10 CFR 50.75 dated June 27, 1988.

In accordance with Section 2.0.2(b) of the above mentioned Decommissioning Funding Plan, the District hereby submits its annual update of the decommissioning estimate for Cooper Nuclear Station (CNS). The District has determined that the 1992 (fourth year) deposit to the external trust fund is \$6,537,600. The attached update documents the calculation for the \$6,537,600 deposit requirement.

The District hereby certifies that the 1992 minimum requirement has been deposited in the external trust fund for purposes of decommissioning of CNS. The attached document provides the methodology for the determination of the 1992 contribution and the basis, to be utilized, for the determination of future contributions.

If you have any questions regarding the CNS Decommissioning Funding Plan, please contact T. E. Trouba, Financial Planning and Budget Manager at (402) 563-5589.

Sincerely,

G. R. Horn
Nuclear Power Group Manager

GRH/dnm
Attachment

cc: Regional Administrator
USNRC - Region IV

NRC Resident Inspector
Cooper Nuclear Station

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Cooper Nuclear Station
Decommissioning Funding Plan

December 31, 1992

Section 1 - Introduction

Nebraska Public Power District (the "District") owns and operates Cooper Nuclear Station (the "CNS"), which is a nominally rated 800 MW nuclear generating plant located on a site on the west bank of the Missouri River approximately 65 miles south of Omaha. CNS contains a boiling water reactor (the "BWR") which is designed to supply steam to a turbine-generator to produce a gross electrical output of approximately 800 MW under normal operating conditions. In July, 1974, the District received from the Nuclear Regulatory Commission (the "NRC") an Operating License to operate CNS at 100% reactor core power. The Operating License authorizes operations of CNS at reactor core power levels not in excess of 2,381 MW (thermal). The original Operating License was valid through June 4, 2008. The District submitted a request to the NRC for an extension of the Operating License to recover the construction period. In July 1991, the NRC approved such request and granted a license amendment to extend the Operating License expiration date until January 18, 2014.

Section 2 - NRC Financial Regulation for Decommissioning

NRC regulation 10 CFR 50, dated June 27, 1988, [53 Fed. Reg. 24049], sets forth the financial criteria for decommissioning licensed nuclear facilities. This criteria has been addressed in this Decommissioning Funding Plan of the District (the "Plan"). The NRC defines Decommission as: "to remove (as a facility) safely from service and reduce residual radioactivity to a level that permits release of the property for unrestricted use and termination of license."

Section 3 - NRC Decommissioning Estimate - Cooper Nuclear Station

NRC regulation 10 CFR 50.75(c) dated June 27, 1988, discusses the minimum amounts required to demonstrate reasonable assurance of funds available for decommissioning, by reactor type and power level.

First, a Minimum Decommissioning Amount for decommissioning licensed facilities is calculated based on a boiling water reactor ("BWR") and on the facility's megawatt thermal rating ("MWt"). CNS is a BWR of 2,381 MWt rating. The computation for the Minimum Decommissioning Amount in 1986 dollars for CNS is as follows:

(\$104 million + \$9000 P)
where P equals the reactor's MWt rating
\$104 million + \$9000 (2,381 MWt)
\$104 million + \$21.4 million = \$125.4 million

Second, the Minimum Decommissioning Amount is to be adjusted annually using the following formula:

$$(\text{Minimum Decommissioning Amount}) \times (.65L + .13E + .22B)$$

The "L", "E" and "B" in the formula are escalation factors for Labor, Energy and Waste Burial, respectively. Further, the Energy Index is composed of two factors - Industrial Power & Light Fuel Oils weighted as indicated. For CNS, the January 1986 Minimum Decommissioning Amount of \$125.4 million is escalated as follows:

Indices

Labor (Note: Base Year Index is 1989)

U.S. Department of Labor - Bureau of Labor Statistics Employment Cost Index
Private Nonfarm Workers Compensation (Midwest Region)
December, 1992/January, 1986 Labor = $116.1/88.7 = 1.309$

Energy (Note: Base Year Index is 1982)

U.S. Department of Labor - Bureau of Labor Statistics Producer Price Index
Industrial Power (West North Central Region) December, 1992 = 130.0
and January, 1986 = 114.2
Light Fuel Oils December, 1992 = 59.6 and January, 1986 = 82.0

Application of the formula for BWR's published in Draft Regulatory Guide DG-1003 (Assuring the Availability of Funds for Decommissioning Nuclear Reactors) results in:

$$\begin{aligned} \text{Energy} &= [(130.0/114.2) \times .23] + [(59.6/82.0) \times .77] \\ \text{Energy} &= .262 + .560 \\ \text{Energy} &= .822 \end{aligned}$$

Waste Burial

NUREG-1307 Rev 1 (most current available index as of 5-1-93)

Washington Index	January, 1991/January, 1986	$1.178/1.000 = 1.178$
Nevada Index	January, 1991/January, 1986	$1.288/1.000 = 1.288$
South Carolina Index	January, 1991/January, 1986	$2.331/1.000 = 2.331$

During the last three years, the District has utilized the three referenced burial sites. The percentage of waste shipped by volume to each site is as follows:

Richland, Washington	82.7%
Beatty, Nevada	1.8%
Barnwell, South Carolina	<u>15.5%</u>
	100.0%

A composite escalation factor based on prior waste shipments is developed as follows:

	% of Volume	x Index	= Escalation Factor
Richland, Washington	(82.7%)	x (1.178)	= .974
Beatty, Nevada	(1.8%)	x (1.288)	= .023
Barnwell, South Carolina	(15.5%)	x (2.331)	= <u>.361</u>
		Waste Burial	= <u>1.358</u>

The escalation values for Labor, Energy and Waste Burial are then incorporated into the given formula for the Escalation Factor.

$$\begin{aligned}
 \text{Escalation Factor} &= (.65 \times \text{Labor} + .13 \times \text{Energy} + .22 \times \text{Waste Burial}) \\
 &= .65(1.309) + .13(.822) + .22(1.358) \\
 &= .851 + .107 + .299 \\
 &= 1.257
 \end{aligned}$$

The Minimum Decommissioning Amount for CNS in 1986 dollars is \$125.4 million as determined earlier in this section. Application of the above Escalation Factor results in the following calculation:

$$\text{1986 Minimum Decommissioning Amount} \times \text{1992 Escalation Factor} = \text{1992 Minimum Decommissioning Amount}$$

$$\$125.4 \text{ million} \times 1.257 = \$157.6 \text{ million}$$

Third, the NRC regulation 10 CFR 50.75(e) dated June 27, 1988, [53 Fed. Reg. 24050] states that a method of providing for financial assurance must be selected. The District has selected the external trust method to provide financial assurance.

Additionally, the District shall, in accordance with changes to regulation 10 CFR 50.75(f) [53 Fed. Reg. 24051], dated June 27, 1988, at or about 5 years prior to the projected end of operation, submit a preliminary site specific decommissioning plan.

Section 4 - Annual Deposits to the Decommissioning Trust Fund

A Trust Agreement, as attached to this Plan, has been created to comply with the new NRC regulation. The Trust Agreement establishes an external trust fund (the "Fund") for the sole purpose of accumulating monies for the estimated cost of Decommissioning CNS. Annual deposits to the Fund will be calculated as follows:

First Year

The District's Minimum Decommissioning Costs in the first year as determined using the herein defined NRC regulated formula divided by 19 (the years of remaining Operating License life and the May 31, 1990, deposit to the FirstTier Bank, N.A., Lincoln, Trustee, at the time of this Plan). For purposes of this Plan, Decommissioning of CNS was assumed to begin at the end of the original Operating License (June 4, 2008). However, the possibility exists that CNS may be decommissioned earlier because of contractual relationships or other reasons. In the event a decision is made for an early decommissioning of CNS, a new funding plan will be developed.

NRC 1989 Minimum Decommissioning Amount/years remaining CNS Operating License

\$134.1 million/19 years = \$7.05789
\$7.058 million (1990 deposit)

The District deposited the \$7.058 million with the Trustee on May 31, 1990.

Subsequent Years

The annual deposit to the Fund by the District for the second and subsequent years during the term of the Trust Agreement is calculated as follows:

A.	Adjusted Minimum Decommissioning Amount as determined by the NRC regulation 10 CFR 50.75(c)	\$157,600,000
B.	Less the current balance in the Fund	\$ 20,311,374
C.	Equals the uncollected Estimated Minimum Decommissioning Amount (A - B)	\$ 137,288,626
D.	CNS Remaining Years of Operating Life ⁽¹⁾	21
E.	Present Years Annual Payment (C / D)	\$ 6,537,600

⁽¹⁾The District submitted a request to the NRC for an extension of the Operating License to recover the construction period. In July 1991, the NRC approved such request and granted a license amendment to extend the Operating License expiration date until January 18, 2014.

The District has limited the investment and reinvestment of Decommissioning Trust Funds to the following: (1) Direct obligation of or obligations guaranteed by the United States of America; (2) bonds, debentures, or notes issued by any of the following federal agencies: Federal Intermediate Credit Banks, Federal Home Loan Bank System, Federal National Mortgage Association, or Federal Land Bank; (3) receipts of interest and cash deposits shall be invested on a short-term basis in cash equivalents, short-term investments or mutual funds as the investment manager determines appropriate; and (4) investments shall have a maturity of less than or equal to 10 years, with the portfolio having an average maturity of 5 to 6 years.