



January 29, 2009

L-MT-09-003
10 CFR 50.90

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

Monticello Nuclear Generating Plant
Docket 50-263
Renewed Facility Operating License
License No. DPR-22

Response to NRC Environmental Branch Requests For Additional Information (RAIs)
dated December 18, 2008 (TAC No. MD9990)

Pursuant to 10 CFR 50.90, the Northern States Power Company, a Minnesota corporation (NSPM), requested in Reference 1 an amendment to the Monticello Nuclear Generating Plant (MNGP) Renewed Operating License (OL) and Technical Specifications (TS) to increase the maximum authorized power level from 1775 megawatts thermal (MWt) to 2004 MWt.

The U. S. Nuclear Regulatory Commission (NRC) Environmental Branch has provided three draft RAIs documented in References 2 and 3. Enclosure 1 provides the NSPM response to these RAIs.

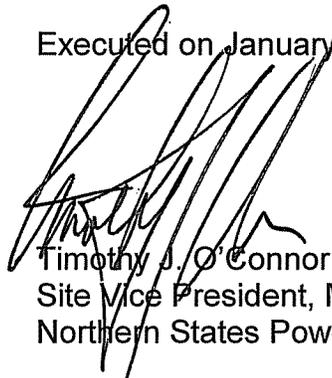
In accordance with 10 CFR 50.91, a copy is being provided to the designated Minnesota Official.

Summary of Commitments

This letter makes no new commitments and does not change any existing commitments.

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

Executed on January 29, 2009.



Timothy J. O'Connor
Site Vice President, Monticello Nuclear Generating Plant
Northern States Power Company - Minnesota

Enclosure

cc: Administrator, Region III, USNRC
Project Manager, Monticello, USNRC
Resident Inspector, Monticello, USNRC
Minnesota Department of Commerce

ENCLOSURE 1

MONTICELLO NUCLEAR GENERATING PLANT

NSPM Response To Environmental Branch RAIs dated December 18, 2008

NSPM Response To Environmental Branch RAIs dated December 18, 2008

NRC Review Item (1)

Withdrawn during December 16, 2008 conference call.

NRC Review Item (2)

Please provide additional information or clarification of the potential increase in water consumption with the uprate. The description of water use in the EA should be made clearer. Specifically, the consumptive use during current operations assuming 130 days per year of cooling tower use is 7800 acre-feet/year. With the power uprate and an increase in cooling tower use to 150 days, the estimated consumptive use is 7700 acre-feet/year, a reduction. This is counterintuitive and needs either a correction or a detailed explanation.

NSPM Response

Section 6.2.2 of Enclosure 4 to Reference 1 discusses this issue. This section states:

Currently, the surface water consumption due to open cycle evaporative losses and cooling tower evaporation and drift is estimated at approximately 6,800 acre-ft/year assuming 130 days of cooling tower operation, 235 days of open-cycle operation and nominal values of cooling tower flow (approximately 509 cubic feet/second). Using the maximum surface water appropriation limit of 645 cubic feet/second as the cooling tower flow value results in an estimated total consumption of 7,800-acre-ft/year.

For extended power uprate, assuming an increase in open cycle consumption of 20 percent, an increase in days of cooling tower operation to 150 days/year, and nominal values of cooling tower flow, results in an estimated consumption of 7,700 acre-ft/year. Using the maximum surface water appropriation limit of 645 cubic feet/second as the cooling tower flow value results in an estimated total consumption of approximately 8,700 acre-ft/year. Note that using the appropriation limit for cooling tower flow is very conservative because the cooling towers are typically operated in "Helper" mode (i.e., not all circulating water flow is passed over the cooling towers).

The first paragraph quoted above discusses expected consumptive use under current licensed thermal power of 1775 MWt. This recognizes that the NPDES permit requires cooling tower operation to meet specified discharge canal temperature limits. NPDES permit limits are a maximum daily average discharge canal temperature of 95°F during the months of April through October, 85°F in November and March, and 80°F in December through February. This has historically required about 130 days of cooling tower operation per year which is expected to increase to 150 days per year with higher heat loads associated with extended power uprate. Additionally, the nominal consumptive use discussed in the first sentence of the first quoted paragraph recognizes that while the water appropriation limit is 645 cubic feet/second the circulation water system capacity is less than this value and the cooling tower capacity is normally insufficient to process all circulating

NSPM Response To Environmental Branch RAIs dated December 18, 2008

water flow to the discharge canal. This nominal case results in the lower value of 6,800 acre-ft/year consumptive use for expected system operation. For conservatism, the last sentence of the first quoted paragraph shows bounding water consumptive use of 7,800 acre-ft/year if circulating water system operation was assumed to operate at the appropriation limit of 645 cubic feet/second with all water going through the cooling towers.

The second paragraph quoted above shows a similar approach to factor in the impact of extended power uprate by increasing open cycle consumptive use by 20%. The extended power uprate case also increases the estimated amount of days where cooling tower use is required to 150 days. This increases estimated consumptive use for the normal case where only a portion of the water appropriation is processed by the cooling towers from 6,800 acre-ft/year at current power to 7,700 acre-ft/year at extended power uprate. For conservatism, the second sentence of the second quoted paragraph above shows bounding water consumptive use increasing from 7,800 acre-ft/year at current power to 8,700 acre-ft/year at extended power uprate if circulating water system operation was assumed at the appropriation limit of 645 cubic feet/second with all water going through the cooling towers and the anticipated change in cooling tower in-service time.

NRC Review Item (3)

EA Section 4.1 states that the EPU "does not significantly affect the size of the MNGP work force and does not have a material effect on the labor force required for future plant outages." While this may be a true statement with regards to future plant operations and refueling outages, it does not answer the question about the short-term socioeconomic effects from implementing the EPU at MNGP. The NRC staff is simply asking whether NSPM would require any additional workers and equipment and material deliveries to support EPU-related plant modifications during the 2009 and 2011 refueling outages. This information was not provided in NSPM's EA. Xcel's Certificate of Need paragraph provided below (4.2.2 Traffic (Minn. R. 7849.0320(B))) indicates that EPU construction would require some number of workers in addition to the average 500 refueling outage personnel, but what does "a few dozen more" workers mean? - 24? 36? 48? It also indicates that the EPU would require "similar types" of equipment deliveries as past refueling outages, but does not say how many additional deliveries would occur during the 2009 and 2011 refueling outages?

NSPM Response

The short-term socioeconomic effects from implementing EPU include additional workers to support implementation of required plant modifications during the 2009 and 2011 refueling outages. Current budget estimates for this work predict the need for approximately 250 additional workers in the 2009 refueling outage and up to 500 additional workers in the 2011 refueling outage. Final planning for both outages is still in progress so these numbers will vary.

Similarly, planned modifications will require additional deliveries of materials to the site by tractor trailer or rail. The numbers of additional deliveries are estimated to be 33 in 2009, 1

NSPM Response To Environmental Branch RAIs dated December 18, 2008

in 2010 and 34 in 2011. These numbers will vary based on final planning, manufacturing schedules and other similar factors. The additional delivery totals are based on the assumption that most small items will be delivered by routinely scheduled deliveries to the site and as such are not counted.

Due to the extensive amount of work associated with EPU modifications, other routine elective modifications that normally occur during an outage could be delayed to a later outage if acceptable based on management review. This supports the conservatism of the estimates provided as the extra workers and additional deliveries may not be a one-for-one increase over a normal outage scope.

NRC Review Item (4)

Wright County, MN, where MNGP is located, is a maintenance area for carbon monoxide (CO). The construction activities associated with the EPU project and significant number of additional workers needed to complete the project, might affect the air quality in the Wright County and nearby counties. The assessment of the employees' vehicles exhaust levels needs to be performed, comparing estimated exhaust emission levels with the threshold emission levels for conformity analysis set forth in 40 CFR 51.853(b)(2) and, for regionally significant levels set forth in 40 CFR 51.853(f). Emission factors from the current version of AP-42 should be used.

NSPM Response

The conformity regulations are codified in 40 CFR 51, Subpart W. 40 CFR 51.850(a) states:

No department, agency or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve any activity which does not conform to an applicable implementation plan.

Wright County was designated non-attainment for the CO National Ambient Air Quality Standard (NAAQS) on March 3, 1978. A State Implementation Plan (SIP) was written to document the plan for attainment and maintenance of the NAAQS. The area was designated as in attainment effective November 29, 1999, and is now considered a maintenance area. A revision to the SIP was approved on the same date. Several aspects of the SIP still remain in place and must continue to be followed. CO concentrations in the area have continued to decline, and 2007 levels were less than 20% of the existing standard.

During development of the SIP, the State of Minnesota determined that the CO non-attainment was due to on-road vehicle emissions from major traffic corridors. Programs that were included in the SIP are a vehicle inspection and maintenance program (which has since been discontinued), an oxygenated fuels program, continued monitoring, and a

NSPM Response To Environmental Branch RAIs dated December 18, 2008

commitment to contingency measures. No programs were implemented that cover construction activities or other temporary activities.

The State of Minnesota does not consider emissions from construction activities to be a significant contributor to CO non-attainment. Construction projects of much larger scope, located within the maintenance area, are not required to conduct an assessment of employee vehicle exhaust. Much of the work force that will be on site during the construction activities will be traveling from elsewhere within the maintenance area, and so these emissions would not be new or additional sources to the area.

Because the State of Minnesota SIP does not contain any provisions for construction activities, and the current concentrations are so far below the NAAQS, approval of this project would meet conformity requirements. Conversations with the State of Minnesota Pollution Control Agency personnel confirm this interpretation of the situation.

Also, AP-42, "Compilation of Air Pollutant Emission Factors" is no longer considered the preferred source of emission factors from mobile sources, and has not been for some time. The EPA Office of Transportation and Air Quality has developed new tools for determining emissions from mobile sources. Specifically, the MOBILE6 software model for on-road mobile emissions, and the NONROAD2005 software model for non-road emissions. Both of these tools are designed primarily for regional planning efforts. They are not set up to estimate emissions from localized, temporary projects like the Monticello uprate.

Wright County has never been in non-attainment for any other pollutant. Therefore, conformity considerations do not apply for other criteria pollutants.

Bounding Analysis – Traffic Count

MnDOT maintains an Automatic Traffic Recorder (ATR) on I-94 about 10 miles NW of the plant. This site is labeled ATR# 200. Annual average daily traffic (AADT) measured at that site for 2007 was 41,436 vehicles per day. For the Monticello uprate project, assuming an additional 1,000 vehicles per day (500 additional workers each driving solo, times 2 trips per day), the AADT increases by slightly more than 2 percent. This count estimate is conservative because it assumes that there will be a one-for-one increase in the number of workers during the outage, and it assumes that each worker will drive their own vehicle. The average daily truck volume for ATR# 200 is 7,655 trucks per day. The Monticello uprate project would add approximately 68 trucks per year (34 deliveries times 2 trips).

Based on the small increase in the traffic count in the area, and the current low CO concentrations (<20% of the NAAQS), vehicle emissions during the construction phase of the Monticello uprate project will not have an impact on the maintenance area status of Wright County for CO.

Screening Analysis – CO Emissions

NSPM performed a screening analysis of CO impacts. For the 2011 outage, it was assumed 500 additional workers would be necessary during the outage. Assuming each worker

NSPM Response To Environmental Branch RAIs dated December 18, 2008

drives their own vehicle, and workers drive 50 miles each way to and from the plant, the project will add 50,000 vehicle miles traveled per day. Using a fleet average CO emission rate of 15.072 grams per vehicle mile traveled (g/VMT) (Ref. 4) results in CO emissions of 0.83 tons per day. This is equal to 0.15% of the Twin Cities maintenance area CO emission budget remainder (Table B-6, Ref. 4). For the 2009 outage, an additional 250 workers results in CO emissions of 0.41 tons per day, which is 0.07% of the Twin Cities maintenance area CO emission budget remainder.

The current schedule for RFO24 in 2009 is 42 days with a major work window of 37 days. To allow for pre-outage work and staffing a total window of 50 days was selected for this analysis. The schedule for RFO25 in 2011 has not been developed but it will be longer so a duration of 60 days was selected for this analysis. Using these outage lengths, the total CO emissions as a result of the project are 20.7 tons in 2009 and 49.7 tons in 2011. These emission estimates are below the applicability threshold of 100 tons per year, found in 40 CFR 51.853(b)(2).

NSPM Response To Environmental Branch RAIs dated December 18, 2008

REFERENCES

1. NSPM letter to NRC, "License Amendment Request: Extended Power Uprate (L-MT-08-052) dated November 5, 2008
2. Email from P. Tam (NRC) to G. Salamon, K. Pointer, and T. Blake dated December 16, 2008, "Draft RAI on Environmental Issues of EPU Application (TAC No. MD9990)" (ADAMS Accession No. ML083530302)
3. Email from P. Tam (NRC) to G. Salamon, K. Pointer, and T. Blake dated December 18, 2008, "Additional RAI Question for proposed EPU amendment, Environmental Issues" (ADAMS Accession No. ML083530998)
4. Metropolitan Council. 2009-2012 Transportation Improvement Program for the Twin Cities Metropolitan Area, Appendix B, Conformity Documentation. September 10, 2008. Available online at <http://www.metrocouncil.org/planning/transportation/TIP/tip20092012.pdf>. Accessed January 2009.