Susquehanna River Basin Commission

a water management agency serving the Susquehanna River Watershed

May 30, 2008

3/14/08
73FR13923
(2)

RECEIVED
2008 JUN 10 PM 2:47
RULES AND DIRECTIVES BRANCH USNRC

Mr. Michael Lesar, Chief
Rules and Directives Branch
Division of Administrative Services
Mailstop T-6D59
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Re: Three Mile Island Nuclear Station, Unit 1
License Renewal Environmental Impact Statement

Dear Mr. Lesar:

The Susquehanna River Basin Commission (SRBC) appreciates the opportunity to comment on the environmental review for AmerGen's Three Mile Island Nuclear Station, Unit 1. SRBC staff anticipates receiving an application(s) for the project for review and action by the commissioners at a future meeting of SRBC. Staff has been involved with informational and coordination meetings with AmerGen from the time the steam generator replacement project was first announced. SRBC regulates water withdrawals and the consumptive use of water associated with energy generation pursuant to Article 3, Section 3.10, and Article 10, Section 10.1, of the Susquehanna River Basin Compact (Compact), P.L. 91-575, and SRBC Regulations 18 CFR Parts 801, 806, 807, and 808. SRBC staff has reviewed the Environmental Report prepared by the applicant for use in the Environmental Impact Statement (EIS), and offers the following comments.

Section 2.1 Location and Features

- Documentation should be provided demonstrating that the flood protection dike – or the location and storage of hazardous material – ensures there is protection from contamination during the flood of record.
- A reassessment of likely flood scenarios should be performed. The original assumptions related to the hydrology, flow patterns, and flood return intervals of the Susquehanna River are likely outdated, and certainly do not account for potential changes over the course of the extended license period due to climate change or other phenomena.

Section 2.2 Aquatic Ecology

- It appears that all of the presented information and conclusions are based on data at least 18 years old. Reference is made to monitoring conducted from 1974-1982 and through 1990, but nothing more recent, and there is no mention of the quantity of water withdrawn and whether that has changed over time. The environmental

1721 North Front Street, Harrisburg, PA 17102-2391 • Phone: (717) 238-0423 • Fax: (717) 238-2436
website: http://www.srbc.net e-mail: srbc@srbc.net

SUNSI Review Complete
Template = ADM-013
E-RIDS = ADM-03
Add = D. Werona (DJW1)

assessment for relicensing should require the collection of new monitoring data and evaluation of that data and any changes it shows.

Section 2.2.2 Water Quality

- The Environmental Report states that in the early study (IA, 1979) the delta T did not exceed 5 degrees F while in the later study (2006 and 2007), delta T is often greater than 10 degrees F, and at one point was over 30 degrees. The cause for the increase in temperature change should be identified, and the potential adverse impacts assessed. Dramatic changes in temperature can be as detrimental, and sometimes more so, for long-term community sustainability than high temperatures. Any thermal assessments should also include the volume of discharged water, as that parameter is important to the delta T.

Section 2.2.3.2 American Shad and Lower Susquehanna River Basin

- The Environmental Report states the number of shad passed (total, high, and low), but does not compare those numbers to what was passed downstream at Safe Harbor. Although Safe Harbor is a significant distance downstream, the percentages should at least be mentioned as a comparison, and to put the overall restoration into context. As with the previous two comments, the quantities of water withdrawn and discharged and their potential effects on shad movement should be assessed.

Section 2.3.1 Groundwater Resources – Water-Bearing Units

- Although generally satisfied with the groundwater explanation, the "glacial" materials could not, in fact, have been deposited by glaciers, as their limit of extent is some 20 miles north of TMI. Water in the Gettysburg shale is commonly considered to be semi-confined and not artesian.

Section 2.3.2 Water Supply Wells

- SRBC has approved Wells 1, 2, and 3 (aka A, B, C) for industrial water supply, and is perplexed to learn that the OSF Well is also used to augment the supply of service water. If this is the case, the well would require review and approval by SRBC.

Section 2.3.3 Groundwater Resources – Groundwater Monitoring

- Are the existing monitoring wells adequate (appropriate locations and density) to capture any problems?
- Has the risk of radwaste on the island contaminating local aquifers or water supply wells been assessed?
- Is there any need to consider monitoring quality and quantity at some neighboring residences or businesses?

Section 2.4 Critical and Important Terrestrial Habitats

- What is the value and quality of the wetlands that have been formed from the borrow pits? Consideration should be given to undertaking some enhancement features – perhaps in conjunction with a local environmental group.

Section 2.12 Known or Reasonably Foreseeable Projects in Site Vicinity

Independent Spent Fuel Storage Installation: The location of the potential spent fuel storage facility should take into account flooding, groundwater, aquatic habitat and other appropriate issues.

EPA-Regulated Facilities in Dauphin, Lancaster, and York Counties: Review of the impacts of extending TMI's license should include analysis of potential effects of TMI's water use and thermal discharge on the operations and/or waste assimilation capability of downstream withdrawals and discharges; likewise, the operation, withdrawals, and discharges of upstream facilities should be analyzed for potential impacts to TMI's operations and thermal discharge assimilation.

Electricity Generating Stations in the Vicinity of TMI-1: The potential for nearby power facilities to impact TMI's operations, and vice versa, should be evaluated. Of particular concern is operations during periods of severe low flow and extreme temperatures, including heat and river ice conditions.

Section 3.1.2 Cooling and Auxiliary Water Systems

- What is the auxiliary water? What are the provisions for backup supply?
- What is the source of auxiliary? Has it been sufficiently reviewed, and does it have the appropriate permits?

Section 3.1.4 Waste Management and Effluent Control Systems

Radioactive Liquid Waste Disposal System: There is no mention of restrictions to liquid radwaste discharge during periods of low flow. There should be an analysis of appropriate flow thresholds below which it is inadvisable to discharge radwaste. There is no discussion in the application of precautions against spills or other accidental introduction of radwaste to surface or groundwater.

Section 4.0 Public Services: Public Safety, Social Services, and Tourism and Recreation

- The Environmental Report seems to indicate that AmerGen concluded this issue is not applicable to TMI-1. However, it is the opinion of SRBC staff that AmerGen could improve community relations and the understanding of the environmental benefits of nuclear power through increased public relations and environmental education. The environmental assessment should include a new analysis of the benefits of reopening the visitors' center weighed against the security risks that action would impose.

Section 4.1 Water Use Conflicts

- AmerGen concludes that any impacts caused by TMI-1 makeup water withdrawal would be "SMALL" and would not warrant additional mitigation. What is the conclusion based on? How small is "SMALL"? The assumptions and conditions used in the analysis should be provided; they may not be valid if the same assumptions and conditions were used as in the original siting study 40 years ago. In particular, the amount of other consumptive water use on the river, both upstream and downstream of TMI, has changed dramatically and will continue to grow. Natural hydrologic conditions may also have changed. Without a demonstration of accurate

accounting for water withdrawal and discharge, it is impossible to assess potential impacts to downstream water users.

Section 4.4 Heat Shock

- AmerGen concludes that heat shock issue does not apply to TMI-1 because the unit does not use once-through cooling. However, it is conceivable that heat shock could be an issue during extremely low flows or during unusual operations (such as unexpected flow interruption or loss of York Haven pond). Such potential should be investigated. Again, without accurate determination of discharge water quantity and temperature, AmerGen's conclusion is unfounded.

Section 4.5 Groundwater Use Conflicts (related to plant groundwater withdrawal)

- The assessment should include the potential impact of all groundwater wells on site. The conclusions presented in the Environmental Report are based on the well withdrawals already approved by SRBC; however, there is at least one additional unapproved well in production. The 1996 pump tests cited by AmerGen do not include any unapproved wells, and are thus insufficient to evaluate potential groundwater use conflicts.
- The use of additional unapproved wells has likely increased the quantity of groundwater withdrawal on-site. It appears that all groundwater evaluations in the Environmental Report are based on the withdrawal quantity from approved wells only; all assessments involving groundwater impacts or conflicts should be performed again using an accurate value for total groundwater withdrawal.
- Applicant should assess the potential groundwater conflicts among wells in their own system, to ensure their long-term viability.

Section 4.6 Groundwater Use Conflicts (related to plant river withdrawal)

- What is the basis for the conclusion by AmerGen that the impacts of the river withdrawal to local groundwater are small? The details of that analysis should be made available for review.
- As the Environmental Report states, SRBC directs the release of storage on behalf of TMI during times of drought. However, the quantity released is equivalent only to the consumptive loss at the plant, and not the total withdrawal, which is considerably greater. Further, replacement releases are made only during very severe droughts, and not during moderate droughts and other short-term periods of unusually low flows. Thus, despite releases by SRBC, there remains the potential for groundwater impacts due to the difference between total withdrawal and consumptive loss, and during periods of moderate and short-term severe droughts. These potential impacts should be assessed.
- There is no documentation presented demonstrating that TMI-1's surface water withdrawal is capturing only river water, and not also drawing groundwater from the adjacent aquifer.

Section 5.1 Discussion

- AmerGen references data presented in Section 2.3 on groundwater resources at TMI, concluding that tritium in the on-site groundwater is not a threat to nearby groundwater sources because the Susquehanna River acts as a boundary between the island and the aquifers on the east and west shore. If that is the case, what amount of tritium is being delivered to and carried away by the Susquehanna River? What is the potential impact to the aquatic community of such delivery? Have the appropriate regulatory agencies been properly notified?

Section 6.1 License Renewal Impacts

- SRBC staff cannot reach the conclusion that all impacts of the license renewal are small, as concluded by AmerGen, until all the aforementioned additional assessments are completed.

Section 6.2 Mitigation

- SRBC staff cannot reach the conclusion that additional mitigation measures are not warranted until all potential impacts of license renewal are sufficiently evaluated.

Section 6.3 Unavoidable Adverse Impacts

- In addition to the impacts listed, other unavoidable impacts include thermal discharge and localized impacts of the river withdrawal. There may be others.

Section 6.4 Irreversible and Irretrievable Resource Commitments

- Not listed among the resource commitments is the water demand. The water lost through plant operations is removed from the Susquehanna River Basin forever, and it is a cumulative loss that will continue through the end of license period. The long-term commitment and ultimate loss of that water renders it unavailable for use by any other power plant, water supply intake, recreational interest, aquatic habitat, or inflow to Chesapeake Bay. It is also important to note that renewal of the license commits that water in such a way that it is also unavailable to uses <u>upstream</u> of TMI, in order to ensure its continued availability for use at the plant. It is unexpected to find that AmerGen would overlook a resource as critical and integral to plant operations, as well as to the natural, social, and economic development of the entire region, in its Environmental Report.
- There is no mention of the long-term implications to the resource of the facility's thermal discharge.

Section 6.5 Short-Term Use Versus Long-Term Productivity of the Environment

- The existing mitigation for TMI-1's consumptive water use was put in place early in the facility's operations. A reassessment of the impacts of the continued withdrawal and consumptive use over the extended license period should be performed, in particular with regard to any changes or increases to withdrawals and consumptive uses.
- As with the previous issue, there is no recognition of the potential impact due to the facility's thermal discharge.

Chapter 7 Alternatives to the Proposed Action

- The assessment of alternatives in Chapter 7 is limited entirely to alternatives for power production in lieu of continued operation of TMI. An evaluation should also be conducted of alternatives to specific current operating practices at TMI that would allow continued generation at the plant, but with lesser impacts to the air, soil, and water resources of the region. Technology has advanced a great deal in the 40 years that have passed since the design of TMI-1, and its adoption and use on-site should be investigated as a condition of license renewal.

If you have any further questions, please feel free to contact me at (717) 238-0423, extension 223, or via e-mail at mbrownell@srbc.net.

Sincerely,

Michael G. Brownell

Michael G. Brownell, Chief
Water Resources Management Division