CCNPPEISCommentsResource

From: Michael Mariotte [nirsnet@nirs.org]
Sent: Monday, April 14, 2008 4:10 PM
To: CalvertCliffsCOLAEIS Resource
Subject: EIS scoping comments for Calvert Cliffs
Attachments: CCEIScomments.doc

Chief, Rules and Directives Branch
Division of Administrative Services, Office of Administration
Mailstop T-6D59,
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Attached and pasted in below are the scoping comments of the Chesapeake Safe Energy Coalition for the Calvert Cliffs Environmental Impact Statement.

Please confirm receipt of these comments.

Thank you,

Michael Mariotte
Executive Director
Nuclear Information and Resource Service
for Chesapeake Safe Energy Coalition

April 14, 2008

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Re: Comments on EIS scoping for Calvert Cliffs Unit 3

The Chesapeake Safe Energy Coalition submits the following comments on the EIS scoping for the proposed Calvert Cliffs Unit 3 reactor on behalf of our member organizations: Beyond Nuclear, Clean Water Action, Green Party of Maryland, Maryland Public Interest Research Group, Maryland Sierra Club, Nuclear Information and Resource Service and Public Citizen.

Please contact Michael Mariotte, Executive Director, Nuclear Information and Resource Service, if you have comments or questions about these comments. NIRS, 6930 Carroll Avenue, Suite 340, Takoma Park, MD 20712; 301-270-6477, nirsnet@nirs.org.

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If the perceived benefits of a proposed project outweigh the potential damage and costs the project would reasonably be foreseen to cause, then the project is likely to obtain approval from regulatory authorities, and gain general public support as well. On the other hand, if the project's costs are perceived as greater than any foreseeable benefits, then the project likely will be rejected by both the public and regulatory agencies.

To have credibility with the public and state and local governments and legislatures, this cost/benefit analysis must be as complete and transparent as possible. A primary purpose of an Environmental Impact Statement (EIS) is to provide this clear, reasoned, transparent cost/benefit analysis of a proposed project.

An EIS done properly, with full consideration of all factors and all alternatives, and with complete transparency of both conclusions and documentation of how those conclusions were reached, is a valuable document that can well serve the public. An EIS done without sufficient consideration of relevant factors, or without full transparency, instead undermines public trust in both the applicant and the regulatory agency. In such a case, the lack of public trust and confidence often can result in a final outcome counter to the applicant's desire even if a temporary victory, i.e. granting of an initial license, is gained.

In this case, Unistar/Constellation Energy's Environmental Report lacks credibility and appears more intended at deflecting and deterring public involvement in the EIS than contributing to careful and transparent analysis. Specifically, the applicant's assertion (and the NRC's apparent acceptance of that assertion) that all financial information, including basic estimates of construction cost, are to remain proprietary makes any discussion of cost/benefit analysis impossible, and thus irrelevant, and leaves the EIS unable to fulfill one of its most basic obligations.

This is glaringly so because Unistar/Constellation certainly will have to disclose these estimates at some point in other forums: whether to the Securities & Exchange Commission, the Maryland Public Service Commission, its own investors, or wherever. Thus, the only possible rationale for withholding these figures is to prevent exactly the type of analysis, and public discussion of that analysis, that the EIS is intended to accomplish.

Even if the NRC staff has access to this allegedly proprietary information, and prepares a cost/benefit analysis based upon its access, the public still would not have the ability to assess this information, add a public perspective the NRC staff may be lacking, and comment upon this information—legal requirements of the EIS.

We will acknowledge that some financial information not essential to making a cost/benefit determination may be withheld as proprietary (though we question the validity of this, since all of this information will be revealed in other forums), it is simply not possible to conduct a cost/benefit analysis with one side of the equation—cost—missing entirely.

Thus, absent fundamental information on the cost of this project, no cost/benefit analysis can be prepare or reviewed and the EIS would be an illegal document of no value and would only serve to undermine public credibility of both Unistar/Constellation and the NRC.

The NRC must avoid this outcome by including in the EIS information on the estimated costs of this project. Moreover, given the wide range of cost estimates already reported by other U.S. utility projects (for example, Florida Power & Light testimony before the Florida Public Service Commission estimates construction costs for a single new nuclear unit running from $6 to $12 billion—a huge range), the EIS should not limit itself to a single cost figure, but rather must conduct its cost/benefit analysis on a range of foreseeable construction costs.

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*use of energy efficiency to reduce electricity demand to equivalent output of Calvert Cliffs-3, including various and aggressive energy efficiency program scenarios
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The EIS should fully consider the effects of radioactive waste on Maryland and the Chesapeake Bay, including but not limited to:

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Potential Effects of Climate Change

If built, the proposed Calvert Cliffs-3 reactor would be licensed to operate until at least mid-century; if it operated successfully for that long, a license extension could allow it to operate until nearly the end of this century. The scientific community is in agreement that we are entering a period of climate change (a period, by the way, that this reactor would make worse since it would divert resources that could be used for genuinely carbon-free technologies like solar and wind power and increased energy efficiency). Indeed, there is substantial indication that we already have begun experiencing the early effects of climate change. Future effects are unknown, but are likely to include more frequent and stronger storms, changes in water use and availability, etc.

The EIS should fully examine the potential effects of climate change on the Calvert Cliffs 3 facility, including the possibility of severe weather-induced accidents. For example, tornados are occurring with greater frequency in the region and a strong tornado nearly hit the Calvert Cliffs site just a few years ago, whereas 30 years ago tornados were a rarity in the mid-Atlantic region. The EIS should consider the effect of stronger and more frequent tornados hitting the Calvert Cliffs site directly.

Similarly, a major hurricane hit Maryland and the Washington, DC area in September 2003, causing widespread damage. Hurricanes also have previously been a rarity in the region. The EIS should address the effects of larger and more frequent hurricanes directly hitting the Calvert Cliffs site.

Various studies have suggested extraordinary but variable impacts on water due to climate change—ranging from severe coastal flooding in some areas to a drying up of water supplies in other areas. The EIS should address the possible impacts of climate change on the Chesapeake Bay and the water supply for Calvert Cliffs-3.

Security

*Without revealing actual safeguards information, the EIS should address the procedures and safeguards Constellation/Unistar intends to use to ensure that personnel working on the Calvert Cliffs-3 reactor do not have access to restricted areas at the operating Calvert Cliffs 1 and 2 reactors.

*The EIS should address the potential adverse environmental impacts from a successful malevolent act involving a significant release of radiation from Units 1 & 2 on the safe operation of the new co-located unit.

Seismic Risks

The risk of potentially damaging earthquake-induced ground accelerations requires assessment for all proposed structures, especially nuclear reactors. The Calvert Cliffs Nuclear Power plant site is located on the Maryland Coastal Plain, located in the middle of the North American tectonic plate. Because the region is distant from active plate boundaries, earthquakes, including those caused by ruptures which actually displace rocks near the earth's surface, are relatively infrequent. However, most of the interior of the North America plate, including the proposed reactor site, is approximately under northwest-southeast horizontal compression, and as stress and strain build up, year after year, strengths are exceeded and earth materials fail along surfaces called 'faults'. Often, ancient faults are 'reactivated' because they are still zones of weakness.

The probability that a large or even major earthquake could occur within a given part of the plate interior within a given period of time is poorly known. This is due to the relatively low recurrence rate for such events—a problem similar to that for major hurricanes. Examples of major historical earthquakes elsewhere in the interior of the North American plate include the Charleston, SC event (1886, magnitude 7.3) and the three shocks (1811-12) near New Madrid, Missouri (7.8-8.1), which were felt as far away as Washington, DC. Much of the city of Charleston was destroyed in the 1886 event. These earthquakes were all bigger than the 17 October 1989 M 6.7 San Francisco earthquake, which collapsed some freeway overpasses. The "Magnitude" of an earthquake, on the so-called "Richter" scale, is a measure of the energy released by rupture along a fault, not the shaking at any particular site. The shaking—usually measured on the Modified Mercalli scale- and possible damage is a function of distance from the epicenter and the properties of the geologic formations below the reactor.

In order to evaluate the shaking risk to a potential new reactor, the EIS needs to be based on 1) an up-to-date study of historical seismicity in the reactor region, and 2) a geologic assessment of potentially active earthquake faults in the vicinity. At any place on earth, the weaker the shock, the more frequent it will be. Since it is large-magnitude earthquakes relatively close to the site that are relevant to potential damage, the EIS needs to establish the likelihood of a given level of ground shaking being exceeded within the expected lifetime of the reactor (say, 60 years). Earthquake seismology has advanced so greatly in recent years that the EIS should not rely on dated analyses.

Mapping deeply buried faults in the Calvert Cliffs region or elsewhere is difficult, and establishing whether they are potentially active (could rupture again during the lifetime of the reactor) is even harder. However, it is certainly possible to search for faults that offset geologically young sediment layers—such faults (for example the Stafford Fault in Virginia) are obviously candidates for renewed failure, and earthquake generation. Careful mapping of the Miocene-aged sediment layers outcropping along the Calvert Cliffs has been done and published subsequent to the construction of the existing power plant in the mid-1970s. This new mapping shows—more accurately than was known before-- the layers to be gently dipping (tilted) down to the southeast, and not disrupted by faults—except at one site, located about 1 mile south of the Calvert Cliffs Nuclear Power Plant, just north of Rocky Point. At this place along the cliffs, the layers appear to be offset a couple meters—that is, the layers are not continuous. The offset is such that the layers to the south are higher than those on the north. Detailed geological examination is needed to prove that the offset is not due to mapping errors—unlikely--, and, if a fault is indicated, boreholes will be needed to establish its strike (trend) and dip. How close does this potential fault come to the proposed reactor site? The proximity of this potential fault to the proposed reactor indicates that ground-shaking could be relatively intense, if a sizeable rupture were to occur during the lifetime of the reactor.

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CHESAPEAKE SAFE ENERGY COALITION

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Potential Effects of Climate Change

If built, the proposed Calvert Cliffs-3 reactor would be licensed to operate until at least mid-century; if it operated successfully for that long, a license extension could allow it to operate until nearly the end of this century. The scientific community is in agreement that we are entering a period of climate change (a period, by the way, that this reactor would make worse since it would divert resources that could be used for genuinely carbon-free technologies like solar and wind power and increased energy efficiency). Indeed, there is substantial indication that we already have begun experiencing the early effects of climate change. Future effects are unknown, but are likely to include more frequent and stronger storms, changes in water use and availability, etc.

The EIS should fully examine the potential effects of climate change on the Calvert Cliffs 3 facility, including the possibility of severe weather-induced accidents. For example, tornados are occurring with greater frequency in the region and a strong tornado nearly hit the Calvert Cliffs site just a few years ago, whereas 30 years ago tornados were a rarity in the mid-Atlantic region. The EIS should consider the effect of stronger and more frequent tornados hitting the Calvert Cliffs site directly.

Similarly, a major hurricane hit Maryland and the Washington, DC area in September 2003, causing widespread damage. Hurricanes also have previously been a rarity in the region. The EIS should address the effects of larger and more frequent hurricanes directly hitting the Calvert Cliffs site.

Various studies have suggested extraordinary but variable impacts on water due to climate change—ranging from severe coastal flooding in some areas to a drying up of water supplies in other areas. The EIS should address the possible impacts of climate change on the Chesapeake Bay and the water supply for Calvert Cliffs-3.

Security

*Without revealing actual safeguards information, the EIS should address the procedures and safeguards Constellation/Unistar intends to use to ensure that personnel working on the Calvert Cliffs-3 reactor do not have access to restricted areas at the operating Calvert Cliffs 1 and 2 reactors.

*The EIS should address the potential adverse environmental impacts from a successful malevolent act involving a significant release of radiation from Units 1 & 2 on the safe operation of the new co-located unit.

Seismic Risks

The risk of potentially damaging earthquake-induced ground accelerations requires assessment for all proposed structures, especially nuclear reactors. The Calvert Cliffs Nuclear Power plant site is located on the Maryland Coastal Plain, located in the middle of the North American tectonic plate. Because the region is distant from active plate boundaries, earthquakes, including those caused by ruptures which actually displace rocks near the earth's surface, are relatively infrequent. However, most of the interior of the North America plate, including the proposed reactor site, is approximately under northwest-southeast horizontal compression, and as stress and strain build up, year after year, strengths are exceeded and earth materials fail along surfaces called 'faults'. Often, ancient faults are 'reactivated' because they are still zones of weakness.

The probability that a large or even major earthquake could occur within a given part of the plate interior within a given period of time is poorly known. This is due to the relatively low recurrence rate for such events—a problem similar to that for major hurricanes. Examples of major historical earthquakes elsewhere in the interior of the North American plate include the Charleston, SC event (1886, magnitude 7.3) and the three shocks (1811-12) near New Madrid, Missouri (7.8-8.1), which were felt as far away as Washington, DC. Much of the city of Charleston was destroyed in the 1886 event. These earthquakes were all bigger than the 17 October 1989 M 6.7 San Francisco earthquake, which collapsed some freeway overpasses. The "Magnitude" of an earthquake, on the so-called "Richter" scale, is a measure of the energy released by rupture along a fault, not the shaking at any particular site. The shaking—usually measured on the Modified Mercalli scale- and possible damage is a function of distance from the epicenter and the properties of the geologic formations below the reactor.

In order to evaluate the shaking risk to a potential new reactor, the EIS needs to be based on 1) an up-to-date study of historical seismicity in the reactor region, and 2) a geologic assessment of potentially active earthquake faults in the vicinity. At any place on earth, the weaker the shock, the more frequent it will be. Since it is large-magnitude earthquakes relatively close to the site that are relevant to potential damage, the EIS needs to establish the likelihood of a given level of ground shaking being exceeded within the expected lifetime of the reactor (say, 60 years). Earthquake seismology has advanced so greatly in recent years that the EIS should not rely on dated analyses.

Mapping deeply buried faults in the Calvert Cliffs region or elsewhere is difficult, and establishing whether they are potentially active (could rupture again during the lifetime of the reactor) is even harder. However, it is certainly possible to search for faults that offset geologically young sediment layers—such faults (for example the Stafford Fault in Virginia) are obviously candidates for renewed failure, and earthquake generation. Careful mapping of the Miocene-aged sediment layers outcropping along the Calvert Cliffs has been done and published subsequent to the construction of the existing power plant in the mid-1970s. This new mapping shows—more accurately than was known before-- the layers to be gently dipping (tilted) down to the southeast, and not disrupted by faults—except at one site, located about 1 mile south of the Calvert Cliffs Nuclear Power Plant, just north of Rocky Point. At this place along the cliffs, the layers appear to be offset a couple meters—that is, the layers are not continuous. The offset is such that the layers to the south are higher than those on the north. Detailed geological examination is needed to prove that the offset is not due to mapping errors—unlikely--, and, if a fault is indicated, boreholes will be needed to establish its strike (trend) and dip. How close does this potential fault come to the proposed reactor site? The proximity of this potential fault to the proposed reactor indicates that ground-shaking could be relatively intense, if a sizeable rupture were to occur during the lifetime of the reactor.