

Environmental Impact Statement
Scoping Process

SUMMARY REPORT

Calvert Cliffs Nuclear Power Plant
Lusby, Maryland

October 1998



U.S. Nuclear Regulatory Commission
Rockville, Maryland

INTRODUCTION

On April 10, 1998, the Nuclear Regulatory Commission (NRC) received an application for renewal of the operating licenses of Calvert Cliffs Nuclear Power Plant, Units 1 and 2 (CCNPP). The CCNPP units are located in Calvert County, Maryland. As part of the application, Baltimore Gas and Electric (BGE), the licensee, submitted an environmental report (ER) prepared in accordance with the requirements of 10 CFR Part 51. 10 CFR Part 51 contains the NRC requirements for implementing the National Environmental Policy Act (NEPA) of 1969 and the implementing regulations promulgated by the Council on Environmental Quality (CEQ). Section 51.53 outlines requirements for preparation and submittal of environmental reports to the NRC.

Section 51.53 (c)(3)(ii) was based upon the findings documented in NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Power Plants" (GEIS). The GEIS, which identified and evaluated the environmental impacts associated with license renewal, was issued for public comment and received input from Federal and State agencies, public organizations, and private citizens. As a result of the assessments in the GEIS, a number of impacts were determined to be generic at all nuclear power plants. These were given the designation of Category 1 impacts. An applicant for license renewal may adopt the conclusions contained in the GEIS for Category 1 impacts, absent new and significant information which may cause the conclusions in the GEIS to be inaccurate. Category 2 impacts are those impacts which have been determined to be plant-specific and are required to be addressed in the applicant's ER. Additionally, the Commission determined that the NRC should play no role in energy planning decision-making and that State regulators and utility officials were more appropriate in that role. Therefore, an applicant for license renewal need not provide an analysis of the need for power or the economic costs and economic benefits of the proposed action. Additionally, the Commission determined that the ER need not discuss any aspect of storage of spent fuel for the facility. This determination was based on the Nuclear Waste Policy Act of 1982 and the Commission's Waste Confidence Rule, 10 CFR 51.23.

On June 10, 1998, the NRC published a Notice of Intent in the Federal Register (63 FR 31813). The notice of intent notified the public of the staff's intent to prepare a plant-specific supplement to the GEIS for the renewal of the CCNPP operating licenses. The plant-specific supplement to the GEIS will be prepared in accordance with NEPA, CEQ, and 10 CFR Part 51. As outlined by NEPA, the NRC initiated the scoping process. The NRC invited the applicant, Federal, State, and local government agencies, local organizations, and individuals to participate in the scoping process by providing oral comments at the scheduled public meetings and/or submitting written suggestions and comments no later than August 7, 1998. The scoping process included two public scoping meetings which were held at the Holiday Inn Select in Solomons, Maryland on July 9, 1998. The meetings were advertised in the local newspaper, press releases were issued, and flyers were distributed locally. Approximately 200 people attended the meetings. Both sessions began with NRC staff members providing a brief overview of the license renewal process and the NEPA process. Following the NRC's prepared statements, the meetings were open for public comment. Thirty-six attendees provided oral comments which were recorded

and transcribed by a certified court reporter. The meeting transcripts were supplemented by materials submitted by the speakers. The meeting transcripts were made available on the NRC Internet website at: <http://www.nrc.gov/OPA/reports>.

The scoping process provided an opportunity for public participation to identify issues to be addressed in the plant-specific supplement to the GEIS and highlight public concerns and issues. The Notice of Intent identified the following objectives of the scoping process:

- 1) Define the proposed action
- 2) Determine the scope of the supplement to the GEIS and identify significant issues to be analyzed in depth
- 3) Identify and eliminate peripheral issues
- 4) Identify any other environmental assessments and environmental impact statements being prepared that are related to the supplement to the GEIS
- 5) Identify other environmental review and consultation requirements
- 6) Indicate the schedule for preparation of the supplement to the GEIS
- 7) Identify any cooperating agencies
- 8) Describe how the supplement to the GEIS will be prepared

At the conclusion of the scoping comment period, the transcripts and all written material received were reviewed by the NRC staff and its contractor, and individual comments were identified. All comments and suggestions received verbally during the scoping meetings or in writing were treated equally. Each commenter was given an identification number such that it could be traced back to the transcripts or written comments. Table 1 identifies the individual providing the comment. The individuals are listed in the order in which they spoke at the meetings or provided written comments. Comments were then consolidated and categorized according to the topic within the proposed supplement to the GEIS or according to the general topic if outside the scope of the GEIS. Comments with similar specific objectives were integrated to capture the common essential issues that had been raised in the source comments. Once comments were grouped according to subject area, the staff and contractors determined the appropriate action for the comment. A determination on each comment was made in the following manner:

- 1) Comment not within the scope of license renewal
- 2) Comment on Category 1 issue
 - a) Comment provided no new information, GEIS analysis remains valid and bounding - no further evaluation
 - b) Comment provided new information - will be evaluated during the review and addressed in the plant-specific supplement to the GEIS
- 3) Comment on Category 2 issue
 - a) No new information provided - no further evaluation
 - b) New information provided - will be evaluated during review and addressed in the plant-specific supplement to the GEIS
- 4) Comment raised an issue not addressed in the GEIS - new information provided - will be evaluated during review and addressed in the plant-specific supplement to the GEIS
- 5) Comment on issue pertaining to 10 CFR Part 54 - will be addressed in the Safety Evaluation Report

The preparation of the plant-specific supplement to the GEIS (SEIS) will take into account all the relevant issues raised during the scoping process. The SEIS will address both Category 1 and 2 issues, along with any new information identified as a result of scoping. The SEIS will rely on conclusions as amplified by the supporting information in the GEIS for Category 1 issues and will include the analysis of the Category 2 issues and any new information. The draft supplement to the GEIS will be available for public comment. The comment period will offer the next opportunity for interested Federal, State, and local government agencies, local organizations, and members of the public to provide input to the NRC's environmental review process. The comments received on the draft supplement to the GEIS will be considered in the preparation of the final supplement to the GEIS. The supplement to the GEIS, along with the staff's Safety Evaluation Report (SER), will provide the basis for the NRC's decision on the CCNPP license renewal.

The following summary report identifies the comments and suggestions received as part of the scoping process, and specifies disposition of the comments and suggestions. The identifying number for the individual who provided the comment, from Table 1, is in brackets after the comment. General comments are listed first, then comments related to specific issues are grouped and listed.

Calvert Cliffs Nuclear Power Plant -- Public Scoping Meeting Comments and Responses

General Statements in Support of License Renewal

Comment: License renewal of Calvert Cliffs makes sense: [1]

- License renewal
 - will allow continuation of a safe and reliable energy source
 - strikes careful balance between clean air and a stable fuel supply
 - will continue to provide economic stability to Maryland and BGE
- Nuclear energy provides more than one-fourth of State's electricity.
- The Calvert Cliffs plant
 - has years of monitoring data to demonstrate the plant's operation has been environmentally benign, and the water is clean around plant
 - BGE works with Nature Conservancy to protect tiger beetle
 - thousands of acres of plant property are set aside for wildlife habitat
 - makes sense to maintain with the environmental equilibrium already established
 - has supplied reliable and safe electricity for more than 20 years and saved customers billions of dollars
- The replacement of both steam generators illustrates the utility's commitment to excellence.
- Jobs created and low electric rates have contributed to the regional economy.
- [Nuclear power] is part of the reliable mix forming the regional energy supply.

Comment: BGE and the Calvert Cliffs plant have developed exemplary community relations with the southern Maryland region and have had strong economic and social impacts. [2]

Comment: Concerned over the air quality impacts of alternatives to nuclear power. [2]

Comment: The Calvert Cliffs plant is an integral part and an asset of the community. The Board of County Commissioners has confidence in plant operations and in the [NRC] oversight. [3]

Comment: The Calvert Cliffs plant is an important component of the State's electrical generation mix. In assessments of its 24-year history, it has an excellent environmental record, and it provides significant benefits to Maryland's air quality. [4]

Comment: Has been closely associated with the Calvert Cliffs plant and believes it to be safe. States that there is more than just an economic impact if this plant were shut down--it is the very life blood of Calvert County. [9]

Comment: Believes the community would be better off if other enterprises were held to the high standards of stewardship and community involvement that Calvert Cliffs achieves. [13]

Comment: Identifies three primary reasons for encouraging license renewal: [14, 32]

- It will allow the U.S. to maintain economic electric generating capacity that does not produce greenhouse gases or other pollutants such as sulfur dioxide, nitrogen dioxide, and particulates.
- It will preserve existing jobs and substantial tax revenue for the communities in which the plants are located.
- It is cheaper, more cost-effective than building new [replacement] electric generating capacity.

Comment: BGE is a good corporate citizen and employer. [16]

Comment: BGE is a good corporate neighbor. [17]

Comment: Calvert Cliffs has a track record of environmental consciousness, safety, and efficiency. It is an excellent neighbor, faithful benefactor, and trusted guardian. [18]

Comment: Plant employees are professionals committed to safe operation and well-maintained plants. The BGE organization is a model corporate citizen that takes the high road. [19]

Comment: Calvert Cliffs has forged a partnership with the county, resulting in economic enhancements. Local hunters and farmers would have informed county officials if negative impacts to waterways, wildlife, or crops were identified. [24]

Comment: Re-licensing of the Calvert Cliffs plant would have no impact on archaeological sites or on public educational research activities at Jefferson-Patterson Park and Museum. The plant's visitor's center provides a valuable look at the area's rich heritage and has made significant contributions to historical interpretation and education in the region. [27]

Comment: BGE has a dedicated and demonstrated record of operation that minimizes any risk to the environment or residents. [30]

Comment: Lists economic benefits, public-spirited plant employees, generally good safety record at plant, and positive air impacts as reasons favoring re-licensing. [23]

General Statements in Opposition to License Renewal

Comment: Nuclear power is unsafe, uneconomical, unreliable, and there is no way to safely dispose of waste. [22]

Comment: Nuclear power is a moral catastrophe and all nuclear plants should be shut down (citing uranium mines and mill tailings and Chernobyl for their terrible consequences). [29]

Comment: Favors plant shut down and decommissioning. [36]

Comment: Believes benefits of recommissioning are irrelevant with continuation of risky nuclear business. [36]

Comment: Opposed re-licensing and wants plant decommissioned. [40]

Response: *The proposed action under review is the renewal of the CCNPP licenses for an additional 20 years of operation. The environmental review will be performed in accordance with NEPA. The environmental impacts of the proposed action and any mitigative measures to decrease the impact will be evaluated and alternatives to the proposed action will be examined. The conclusions of the environmental review will be considered in the Commission's decision-making process on license renewal.*

ISSUE: Scoping Meeting Agenda

Comment: General objection to characterizing the meeting as a scoping meeting given its very limited focus and incensed that certain issues such as a permanent facility to dispose of waste, are not open for consideration. [12]

Comment: Concerned that the meeting is not addressing generic environmental issues, waste, release of radiation to the environment, and whether the plant can operate safely during its current license term and into the future. [7]

Comment: Disappointed that many environmental issues have been removed from consideration at this meeting. [11]

Comment: Scope should include issues associated with Chesapeake Bay, on-site impacts of nuclear waste storage, emergency evacuation plans, alternative power production (conservation and renewables). [25]

Comment: Scope apparently does not include ecological risk factors. [38]

Comment: The meeting captures the State of Maryland's environmental concerns. [39]

Response: *The scoping meeting was held to focus on environmental issues associated with the renewal of the Calvert Cliffs Nuclear Power Plant licenses, specifically with the objective of identifying the scope of the environmental review and identifying new issues that would be considered for further evaluation. No issues were considered "off the table." However, as discussed in the introduction, issues that the NRC has concluded are "generic" (Category 1 issues), based on the similarity of the issue for each plant and the resulting impact, have been evaluated and are discussed in the NRC's GEIS for License Renewal. Unless new information is identified, and it is judged to be significant, the Category 1 conclusions outlined in the GEIS remain valid and no further evaluation of the issue is required. The GEIS formed the basis for the revision to the regulation, 10 CFR Part 51, for license renewal and was the subject of extensive public participation during the rulemaking process. Broad issues such as the final disposal of spent nuclear fuel and the morality of using nuclear power are outside the scope of*

the supplemental environmental impact statement for license renewal. Issues specific to Calvert Cliffs' impacts on the Chesapeake Bay will be a part of this environmental analysis, as well as alternatives to license renewal. Emergency evacuation plans are part of the ongoing regulatory requirements BGE is required to meet and continue through license renewal.

ISSUE: License Renewal Process

Comment: NRC's license renewal process is expediting licensing and acting as a shield for the nuclear industry, particularly with the radioactive waste issue. [6]

Comment: Relicensing action may be shielding BGE from deregulation competition. [12]

Comment: The process is set up to guarantee licensing without proper evaluation. [7]

Comment: States that NRC's "revised criteria for relicensing risks public safety for utility profit." [22]

Response: *The NRC's license renewal process, including the use of the GEIS to address many of the environmental issues typical to most or all of the U.S. nuclear power plants, is not an effort to shield the individual license renewal applicants nor does it guarantee a renewed license will be granted. The NRC's GEIS was developed to standardize part of the process by generically evaluating issues and determining whether certain issues are: 1) generic to all or most plants, 2) unlikely to have more than a small impact on the environment, and 3) not subject to further mitigative measures. Those generic issues need not be addressed on a plant-specific basis by a license renewal applicant unless new information is identified by the applicant. It is the licensee's responsibility to provide new and significant information of which it is aware that would cause a generic conclusion to be invalid and cause further evaluation of the issue. The scoping process is also used to identify new issues.*

NRC approval of an application for license renewal is not a foregone conclusion. Safety issues as well as the environmental ones will be evaluated before a decision on an application is reached.

Comment: The scoping meeting should also be held in the Baltimore area. [25]

Response: *NRC holds scoping meetings in the communities where environmental impacts from the proposed action are most likely to occur. Baltimore is outside this area for the Calvert Cliffs license renewal application. Therefore, the staff has no plans to hold public meetings in the Baltimore area.*

Comment: Questions initiating the scoping process without an available waste repository. [36]

Response: *The issue of an available waste repository is the responsibility of the U.S. Department of Energy (DOE). The Commission has determined that nuclear fuel can be safely stored on-site for 30 years after a current license or a renewed license expires (10 CFR 51.23). The environmental impacts of spent fuel and high level waste disposal were evaluated*

in the GEIS and determined to be Category 1 issues. No new information was provided by the comment, therefore, the conclusion contained in the GEIS and the rule remains valid and no further evaluation of the issues is required.

ISSUE: Timing of License Renewal Application

Comment: What's the rush? It seems premature to apply for a renewal license; performance in the next 10 to 15 years should determine whether it should be granted. [8,12]

Response: *As stated in 10 CFR 54.17(c), the NRC allows an application for license renewal to be submitted up to 20 years in advance of the expiration of the current operating license. The current CCNPP licenses expire in 2014 (Unit 1) and 2016 (Unit 2).*

ISSUE: Ecology Concerns

Comment: Evaluate the effects of microbiological interactions within the plant including bacterial contamination of fuel being stored and the consequences of the presence of extremophiles if they live in plant. [5]

Response: *This issue is viewed as a new issue and will be evaluated in the supplement to the GEIS (SEIS).*

Comment: Concerned about the nearness of nuclear waste to the Chesapeake Bay. [6, 7]

Response: *The CCNPP independent spent fuel storage installation facility was built, licensed and is operated in accordance with the NRC's regulations. The proposed action of license renewal will not alter those requirements.*

Comment: Asks that Category 1 issues be evaluated with respect to the Chesapeake Bay and the Patuxent River. [11]

Response: *The GEIS summarizes the findings of a systematic inquiry into the potential impacts of license renewal. The conclusions reached in the GEIS remain valid unless new and significant information is identified with regard to Category 1 issues. The staff will address both Category 1 and 2 issues in the SEIS. However, the staff will rely on conclusions as amplified by the supportive information in the GEIS to address the Category 1 issues, while an analysis will be performed and documented for Category 2 issues. Environmental impacts associated with Category 2 issues in relation to the Bay and Patuxent River will be evaluated in the SEIS.*

Comment: Wants to save the Bay from radioactive emissions from slow leakage or large accident. [15]

Response: The CCNPP is required by the NRC to meet its technical specifications regarding radioactive effluents. Technical specifications are an appendix to the operating license and require that operating procedures be developed and followed such that radioactive effluents result in releases that are small percentages of the limits specified in 10 CFR Part 20. The proposed license renewal does not affect these requirements and no changes to the technical specification limits are needed for license renewal. Design basis accidents were evaluated in the GEIS and determined to be a Category 1 issue. No new information was provided by the comment, therefore, the conclusion contained in the GEIS and rule remains valid and no further evaluation of the issue is required.

Comment: Would like to see study of temperature effects on crab spawning areas and fish migration routes. [28]

Comment: Questioned why infrared photographs of thermal discharges to the Chesapeake Bay are not commonly available. [12]

Comment: The Academy of Natural Sciences Estuarine Research Center has been monitoring effects of Calvert Cliffs effluents on the Bay and has accumulated a 30-year fisheries data set. The Academy's conclusion that BGE has demonstrated its commitment to the environment is based on the following: [10]

- Power generation has had almost no effect on aquatic organisms in the Bay.
- Oyster and crab populations appear unaffected by the plant.
- Thermal discharges have had little effect on local organisms.
- The plant has been responsive in minimizing fish losses from impingement.

Response: The effects of thermal plumes on fish migration was evaluated in the GEIS and determined to be a Category 1 issue. BGE has a 316 a/b permit (NPDES permit), issued by the State of Maryland, that provides limits on thermal discharges and addresses the impacts of impingement and entrainment of organisms as a result of plant operation. License renewal is not expected to affect the permit limits. Based on the evaluation in the GEIS and the information provided by the State of Maryland, no new information regarding thermal plumes was identified by the comment. The conclusion in the GEIS and rule remain valid and no further evaluation of the issue is required. Additionally, the Maryland Power Plant Research Program has looked extensively into the spawning and migration routes and finds little effect of the plant's effluents. Ecological issues related to Category 2 issues, such as impingement and entrainment that are specific to Calvert Cliffs, will be addressed in the SEIS.

ISSUE: Safety Issues

Comment: Past [plant operating] performance does not guarantee future performance. [7]

Comment: The uncertainty regarding plant and safety degradation as the plant ages is being disregarded. [7]

Comment: Safety must remain the top priority. [8, 34]

Comment: High number of emergency [plant] shutdowns during 1993 through 1995 calls into question the existing plant safety. [22]

Comment: There are increased risks related to the aging of this facility. [25]

Comment: Core embrittlement should be dealt with. [34]

Comment: Safety standards should be raised, not limited in scope. [34]

Comment: A comprehensive safety study should be conducted by impartial experts because "NRC is too connected to the industry" to perform an adequate study. [34]

Comment: Material safety margin changes should make the plant more safe, not less safe. [34]

Comment: Requests a discussion of whether steam turbine [generator] replacement is a result of radiation embrittlement. [12]

Comment: [NRC] should consider the condition of pressure vessels 10 years from now. [40]

Comment: As a senior engineer, he understands plant operation and maintenance, and his experience leads him to believe absolutely that the plant is safe. [21]

Comment: The criteria by which plants are judged shows that the power plant "problems" continually improve rather than deteriorate. [26]

Response: *A safety evaluation is being performed to ensure that the plant continues to meet NRC standards and will be documented in the staff's SER required by 10 CFR Part 54, "Requirements for Renewal of Operating Licenses for Nuclear Power Plants." The review includes an aging analysis of structures and components and is performed by NRC and contractor experts. Questions regarding plant safety are beyond the scope of this environmental analysis.*

Comment: The Navy is proposing an expansion of flights over the area, but should consider restricting them instead. [8]

Comment: Expressed concern over a jet flying into the reactor building or spent fuel facility. [8]

Response: *Power plant reactors and spent fuel facilities are designed to rigorous specifications to withstand earthquakes, tornadoes, and other natural or manmade occurrences. The information provided at the scoping meeting does not alter the requirements. This issue is outside the scope of license renewal.*

Comment: Questions the precedent of relicensing reactors posing a higher level of risk than predicted. [38]

Response: *Each plant has performed an individual plant examination (IPE) and an individual plant examination of external events (IPEEE) to determine its vulnerabilities (risk) to both internal and external initiating events. The IPE/IPEEE is outside the scope of the license renewal environmental analysis. However, a severe accident mitigation alternatives (SAMA) analysis will be performed as part of the environmental review and will be documented in the SEIS.*

ISSUE: Accidents and Evacuation

Comment: Accidents can happen. [36]

Comment: Limited roadways would delay evacuation in the event of an accident. [15]

Comment: Concerned about the inadequacy of Highway 760 in the event of an emergency. [17]

Comment: Consider the catastrophic risks with a nuclear accident. [25]

Comment: Catastrophic nuclear meltdown from an aging plant could make the region uninhabitable. [28]

Comment: Assess increased accidents and incident occurrences as a result of fatigue of components especially in a deregulated utility market. [40]

Response: *A probabilistic assessment of severe accidents is discussed in the GEIS as well as an evaluation of design-basis type accidents. These issues were evaluated in the GEIS and were determined to be Category 1 issues. No new information was provided by the comment, therefore, the conclusions contained in the GEIS and the rule remain valid and no further evaluation of the issues is required. A site-specific SAMA analysis for the Calvert Cliffs plant will be performed by NRC Staff within this environmental analysis.*

Each nuclear plant must have an approved emergency plan, per 10 CFR Part 50, that is revised periodically to encompass regional growth. Emergency planning is part of the current operating license and is outside the scope of the environmental analysis for license renewal.

ISSUE: Regional Growth Impacts

Comment: Local massive population growth is not being controlled by the politicians and the business community. [12]

Comment: Growth was initially welcome, but is now a costly proposition in the business community. [37]

Response: *The socioeconomics of the area will be evaluated in the SEIS to determine the impact of plant license renewal on the residents within the region. Areas being addressed in the SEIS will include the impacts from license renewal on: housing, public utilities, education, land use, transportation, and historic and archaeological sites. However, overall population growth that is not related to license renewal is outside the scope of the environmental review for license renewal.*

ISSUE: Economics of License Renewal

Comment: With license renewal, ratepayers will have to subsidize stranded costs, robbing them of financial competition. [22, 25]

Comment: Is steam generator replacement viable without relicensing? [25]

Comment: Is license renewal motivated by a desire to shift costs of operating and decommissioning to customers? [25]

Comment: Nuclear power is the most costly form of power generation. [28]

Comment: It is an economic outrage that BGE will charge consumers for this nuclear plant. [29]

Comment: Wants to make sure that the EIS covers the impact to county and State jobs, the tax base, local fire and rescue squads, local school districts and school volunteer programs, and the ability to provide local and State government. [30]

Comment: The license renewal action is really about money, how to fund a capital investment in light of deregulation and economic competition, and remove it from the competitive rate base. [31]

Comment: Requests that the cost basis of retrofitting to maintain the plant for 20 more years be made public. [31]

Comment: Irradiation causes embrittlement, steam generators wear out, equipment has to be replaced, resulting in a billion-dollar bail-out. [33]

Comment: Extending the plant's license extends the higher cost of living that much longer and may be responsible for economic devastation when the plant shuts down. [37]

Comment: Redistribution of power costs and benefits across the State should be legislated to reduce distribution inequities. [38]

Comment: Recommends including the cost to consumers as a part of the discussion on socioeconomics. [12]

Comment: Cessation of Calvert Cliffs' tax contribution to the county would force a dramatic increase in individual property taxes. [17]

Response: *The cost of renewal versus decommissioning is a business decision that NRC does not control. NRC evaluated the need for a cost-benefit analysis and consideration of utility economics in response to public comments received concerning its proposed rule and draft GEIS. The evaluation concluded that regulatory authority over utility economics falls within the States' jurisdiction (page 28471 of June 5, 1996 Federal Register notice). The Commission has determined these issues are outside the scope of the environmental analysis for license renewal. Likewise, the course of future energy deregulation is outside NRC's authority and will not be addressed in this report. Socioeconomic impacts of license renewal, as discussed above, are part of the staff's evaluation.*

ISSUE: Human Health Effects

Comment: Concerned that small radioactive releases [may harm workers]. [36]

Comment: The whole earth is [naturally] a radioactive waste heap, and we are continually irradiated by natural radiation. [26]

Comment: Venting of radioactive gases, both planned and accidental, increase carcinogens in environment. [28]

Comment: Believes radioactivity vented by nuclear plants is correlated with infant mortality. [33]

Response: *Radioactive emissions from a nuclear power plant are monitored and are consistently very low. It is generally believed that the levels of emissions are well below those that could cause increases in infant mortality or other health effects. Radioactivity present in the natural environment results in an average U.S. exposure of approximately 300 millirem per year (mrem/yr). An addition of <5 mrem/yr at the plant's fence line (and less at further distances) is not likely to contribute to health effects on populations either inside or outside the fence. Monitoring and current license requirements will not change as a result of license renewal. Radiation exposure to the public and workers was evaluated in the GEIS and determined to be Category 1 issues. No new information was provided by the comment, therefore, the conclusions contained in the GEIS and the rule remain valid and no further evaluation of the issue is required.*

Comment: Contends that a high correlation exists between nuclear power generation and cancer deaths. [35]

Comment: Believes that public health standards are not scientifically based, but rather are the result of well-known university scientists who have "sold out." [35]

Comment: Re-evaluate health standards in light of recent UCLA study. [7]

Comment: Challenges NRC to perform extensive time series of morbidity and mortality. [35]

Comment: Urges consideration of work by specific scientists on radiation health effects. [35]

Comment: Wants information about the health effects of exposure to radiation at NRC dose limits especially for workers exposed year after year. [36]

Comment: Asks for review of breast cancer incidence within 100-mile zone around plant. [23]

Response: Numerous sophisticated, peer-reviewed studies of personnel exposed to U.S. occupational levels of radiation for years have shown little, if any, effect on human health. The UCLA study referenced by the commenter is currently being reviewed by the scientific community. The appropriateness of the statistical tool used for this type of epidemiological study is under evaluation. Whether the reported results of the study have validity will be determined after a rigorous analysis by respected, neutral parties outside the NRC.

Radiation standards reflect extensive scientific study by national and international agencies and include a strong element of conservatism to protect the populace. Furthermore, occupational standards are also conservatively set to account for the exposure to those relatively few workers who consistently approach the annual exposure limits. The NRC radiation exposure standards for both the general public and plant workers are presented in 10 CFR Part 20.

Each nuclear power plant is required to submit an annual report on worker exposure. The GEIS determined that occupational exposures would remain well below regulatory limits.

Human health effects from radiation exposure were evaluated in the GEIS and determined to be a Category 1 issue. No new information was provided by the comment, therefore, the conclusion contained in the GEIS and the rule remains valid and no further evaluation of the issue is required. However, the staff will review accepted new studies and information and evaluate the continued validity of the GEIS conclusions as part of its commitment to evaluate and update the GEIS conclusions at specific intervals.

ISSUE: Low Level Radioactive Waste

Comment: Low-level radioactive waste leakage at waste dumps should be reclassified as new information [a Category 2 issue]. [6]

Response: Currently, there are two commercial low level radioactive waste sites in this country—Barnwell, South Carolina, and Hanford, Washington—that take the type of wastes generated by nuclear power plants. These sites, and any new ones, are regulated by the NRC under 10 CFR Part 61. The sites are designed to minimize and retard releases to acceptably small levels. The environmental impacts of low-level waste was evaluated in the GEIS and determined to be a Category 1 issue. No new information was provided by the comment; therefore, the conclusion in the GEIS and the rule remains valid and no further evaluation of the issue is required.

ISSUE: Spent Nuclear Fuel

Comment: No additional spent fuel should be generated without a plan for its disposal. [11]

Comment: There is no permanent disposal facility for nuclear waste. [12]

Comment: Concerned that nuclear waste is left for future generations. [23]

Comment: Questions how the NRC can license any plant to operate with no safe way to dispose of long-lasting nuclear waste. [29]

Comment: NRC has a responsibility to limit nuclear waste given that there are no viable plans for disposal or reprocessing; the waste just accumulates. [25]

Comment: Nuclear waste [spent fuel] is not producing victims, not killing people. [26]

Comment: Detaching responsibility for waste disposal from a decision to produce more is irresponsible. [23]

Response: *The siting of a national waste repository is the responsibility of the DOE. As the issues are resolved, permanent siting to dispose of spent fuel will be achieved. The DOE has a schedule for the final determination of the disposal site and construction completion and is in the process of characterizing the Yucca Mountain site for a repository. Site characterization is projected to be complete by 2002, and a geologic repository is not expected to be ready before 2010 (GEIS). In the interim, on-site spent fuel storage in pools and in dry cask storage facilities continues in accordance with NRC regulations. The Commission has determined that on-site spent fuel can be stored safely for 30 years after the current operating license or a renewed license expires. Additionally, the DOE continues to develop improved ways for treating and stabilizing high level nuclear waste. Off site radiological impacts were evaluated in the GEIS and determined to be a Category 1 issue. No new information was provided by the comment, therefore, the conclusion contained in the GEIS and the rule remains valid and no further evaluation of the issue is required.*

Onsite Storage

Comment: Nuclear waste at the site should constitute a Category 2 issue. [6]

Comment: Questions the long-term suitability of on-site fuel storage systems and degradation of [storage] cask welds. [6]

Comment: Concerned about the inability to transfer cask contents [spent fuel] as needed. [6]

Comment: Concerned about cracks in dry [storage] casks. [36]

Comment: Asks that the environmental review consider and inform the public of any safety risks from continued on-site storage. [23]

Comment: Wants the environmental review scope to include the total waste to be stored temporarily and for a longer interim period. [40]

Response: *On-site spent fuel storage facilities are licensed by the NRC and must meet standards set forth in 10 CFR Part 72. The safety and environmental effects of long-term storage of these spent fuels on site has been evaluated by the NRC under the Waste Confidence Rule and a generic determination of no significant environmental impact has been made and is included in the regulations in 10 CFR 51.23. In that rule, the Commission determined that spent fuel can be safely stored on-site for at least 30 years beyond the current licensed and license renewal operating life. The NRC has a licensing process for casks, also regulated by 10 CFR Part 72. These wastes are under continual licensing control. On-site storage of spent nuclear fuel was evaluated in the GEIS and determined to be a Category 1 issue. No new information was provided by the comment, therefore, the conclusion contained in the GEIS and rule remains valid and no further evaluation is required.*

Waste Repository

Comment: Recent studies question whether Nevada is suitable for a waste repository. [6]

Comment: Lacks confidence in the Waste Confidence Act. [23]

Comment: Concerned about the government's failure to develop a repository. [17]

Comment: The Department of Energy has not been successful in finding a safe [site for a] repository for spent nuclear fuel. [28]

Comment: There is no safe way to dispose of nuclear waste. [29]

Comment: High-level waste storage should not be ignored. [34]

Comment: The State of Maryland regards ultimate nuclear waste management as a federal government issue and is a participant in litigation to require DOE to comply with the Nuclear Waste Policy Act. The State reserves the right to request that disposal of high level waste (HLW) be changed from a Category 1 to a Category 2 issue if it appears that HLW may not be disposed of in a DOE-constructed facility. [39]

Response: *As stated previously, siting and construction of a high level waste storage facility is the responsibility of DOE. The Nuclear Waste Policy Act of 1982 authorized DOE to dispose of high level waste. In 10 CFR 51.23, the Commission determined that spent fuel can be safely stored on-site for at least 30 years beyond the current license and license renewal operating life. Spent nuclear fuel disposal was evaluated in the GEIS and determined to be a Category 1 issue. No new information was provided by the comment, therefore, the conclusion contained in the GEIS and the rule remains valid and no further evaluation of the issue is required.*

ISSUE: Waste Transport

Comment: Contamination issues have halted waste transport in Europe. [12]

Comment: Waste cannot be safely transported or stored. [15]

Comment: Transit accidents are possible with spent nuclear fuel rods. [36]

Response: *The regulations for the transportation of radioactive material are located in the NRC regulations, 10 CFR Part 71 and the Department of Transportation regulations, 40 CFR 173. Compliance with these requirements will not be altered by license renewal. The generic and cumulative impacts of the transportation of nuclear waste to a high level waste repository is currently a Category 2 issue that is being evaluated for possible reclassification as a Category 1 issue. Until that decision is finalized, waste transport will be discussed in the SEIS for each site using the Table S-4 impact parameters from 10 CFR Part 51.*

ISSUE: Terrorist Intervention with Nuclear Waste

Comment: Questions security of nuclear waste from targeting by terrorists. [36]

Comment: Concerned about potential acts of terrorism including nearby Columbia Gas storage tanks and operations. [12]

Response: *Security and safeguard issues are regulated by the NRC in accordance with 10 CFR Part 73, physical protection of nuclear plants and materials. Anti-terrorist security measures have been established for each plant. This issue is outside the scope of the environmental analysis for license renewal.*

ISSUE: Alternative Energy Sources

Comment: Agrees that BGE is a good corporate citizen and suggests they lead the movement into the use of renewable and sustaining fuels. [11]

Comment: Asks that all renewable energy sources be addressed in alternative analysis. [11]

Comment: Encourages wind, solar power, composted bio-mass, energy conservation and population as important alternatives to nuclear and fossil fuel plants. [28]

Comment: Believes Calvert Cliffs plant is not competitive with alternative fuels and recommends retrofitting plant as a combined-cycle gas plant. [33]

Comment: Recommends developing alternative energy sources. [36]

Comment: Consider alternatives such as on-site use/manufacture of hydrogen fuel cells. [38]

Comment: Using the site for an alternative energy facility would limit socioeconomic disadvantages of not relicensing and should be included in the review scope. Believes that tightening up air emissions from all fossil fuel plants could compensate for the nuclear advantage in air emissions and should be included in review scope. [12]

Comment: Review of alternative fuels should consider impacts to regional air quality, land impact, energy availability, new gas pipelines, and energy transmission. [14, 32]

Response: *The SEIS will include an analysis of reasonable alternative energy sources. The GEIS included an extensive discussion of alternatives, but while many methods are available for generating electricity, and a number of combinations or mixes can be assimilated to meet a defined generating requirement, such an expansive consideration would be too unwieldy to perform given the purposes of the analysis. Therefore, the NRC determined that a reasonable set of alternatives should be limited to analysis of single, discrete electric generation sources and only electric generation sources that are technically feasible and commercially viable (GEIS p8-1). Imported power and energy conservation will be included in the analysis of alternatives.*

ISSUE: BGE Media Manipulation

Comment: Weekly blank-out periods and test alerts on TV manipulate NRC and public opinion. [12]

Response: *The comment provided appears to pertain to the National Emergency Broadcasting System and is outside the scope of this review.*

ISSUE: Suggested Risk Management Assessments

Comment: Additional risk assessments should be carried out for the following bullets: [38]

- State agencies should be required to demonstrate their risk assessment, management, and communication to monitor and control health risks.

Response: *The Maryland Power Plant Research Program provides considerable environmental monitoring. The NRC's Emergency Preparedness exercises involve and assess State and local emergency handling capabilities.*

- Believes a risk assessment/management study by State and federal agencies should address whether risk levels increase and how to mitigate them.

Response: *The IPE/IPEEE have been performed to address risks and are not part of the environmental analysis for license renewal. The SAMA analysis, however, will be addressed in the SEIS.*

- Evacuation basis and updated plan

Response: Evacuation issues are included in Emergency Preparedness plans and exercises, and are outside the scope of the SEIS.

- Plant risk factors evaluating plant operating experience, deterioration, and projected life of containment structures and an instrumentation system to continually monitor and "telemeter" measurements to State or county personal

Response: The Safety Evaluation Report rather than the SEIS will address the integrated plant assessment and the time limited aging analysis.

- Workforce protection, specifically analyzing and monitoring sickness and death of plant workers by a neutral agency, providing a computerized record system to a designated clinic for handling radiological emergencies for optimum treatment and a neutral source of risk information for exposed workers and their families

Response: The radiation protection function of the NRC provides regulatory oversight of worker protection. The regulation, 10 CFR 20, "Standards for Protection Against Radiation" provides limits of exposure for protection of occupational workers and individual members of the public. NRC's emergency preparedness oversight ensures that designated local providers are prepared to provide treatment in emergencies. This issue is outside the scope of the SEIS.

- Risks and costs of maintaining a permanent on-site spent fuel storage facility in the event that a repository is unavailable

Response: As discussed previously, the Commission has determined that spent fuel can be safely stored on-site for 30 years after the current license and renewed license period. Spent fuel disposal is the responsibility of DOE. These issues have been evaluated in the GEIS and determined to be Category 1 issues. No new information was provided by the comment, therefore, the conclusion contained in the GEIS and the rule remains valid and no further evaluation of the issue is required.

- Expand emergency response training as necessary and include non-ionizing toxic agents and precautionary protection procedures

Response: This training is a function of the CCNPP's Emergency Preparedness Program and is outside the scope of this SEIS. Additionally, the NRC staff, CCNPP, and State and local government agencies participate in emergency preparedness drills.

- Update public health education and communications to discuss in detail the risks and susceptibilities of various populations to radiation releases to the environment, particularly releases that pose a low (but not zero) order of risk.

Response: Current limits are carefully considered from the recommendations of national and international scientific review boards and are conservative to protect children as well as adults. Radiation exposure to the public was evaluated in the GEIS and determined to be a Category 1 issue. No new information was provided by the comment, therefore, the conclusion contained in the GEIS and the rule remains valid and no further evaluation of the issue is required.

- Distribution of KI [potassium iodide] tablets to homes with children who live near the plant

Response: As stated by the commenter [38], the Commission recently granted a petition to amend its emergency preparedness regulations to require states, in developing the range of protective actions, to consider the use of KI as a supplement to evacuation and sheltering, as appropriate. This issue is outside the scope of the SEIS.

- Economic benefit to community may be overstated in light of financial responsibility in the event of a nuclear incident

Response: Overall economic issues are outside the scope of license renewal, however, the socioeconomic impacts of license renewal in a limited number of areas will be evaluated in the SEIS.

- Concern over negative economic aspects of plant closing ignores the value of property and reactor components for other power generation

Response: This issue will be factored into the analysis of alternative energy sources in the SEIS.

ISSUE: Deficiencies and Suggested Updates of Generic EIS for License Renewal

Comment: There was inadequate notice to the public regarding the opportunity to participate in the development of the GEIS. [12]

Comment: The document [GEIS] fails to develop the energy needs of the population over the term of relicensing and the significance of different alternatives within that context. [12]

Comment: Overlooks the issue of long-term storage of radioactive waste. [12]

Comment: Add as significant new information or generally update document [GEIS] to include: [12]

- Ground movement at Yucca Mountain is incompatible with stable storage
- Vectra Corp is no longer in business because of cask integrity problem
- Approach to energy demand as a result of deregulation of the electric power industry
- Potential for meeting proposed carbon dioxide reductions with and without relicensing
- Terrorism events causing spread of radioactivity over large area
- Ultimate waste control issue including alternatives with cost estimates and comparison with non-nuclear alternatives.

Response: As stated in the introduction, the 10 CFR Part 51 rulemaking and the GEIS were the subject of extensive public participation. At the time, it was recognized that the GEIS will need to be examined periodically to ensure the conclusions remain valid and to incorporate new information. To this end, the NRC intends to update the GEIS every 10 years to ensure its continued relevance to the issues of license renewal. Update activities will include public participation. Issues such as these listed will be evaluated for inclusion in the next version of the GEIS. Additionally, the rule has a provision to evaluate new and significant information in plant-specific license renewal applications should it be identified.

ISSUE: Requests for Additional Analyses

Comment: Compare waste heat generated by on-site spent fuel with generation of electricity including all waste heat sources from other units in the tidewater region. [12]

Comment: Analyze environmental impacts of closing reactors now or by year 2000. [40]

Response: These requests are outside the scope of the environmental analysis for license renewal. However, the staff will analyze the environmental impacts of the no-action alternative (decommissioning CCNPP) as part of the alternatives section of the SEIS.

Miscellaneous Remarks:

Comment: No plant meets its current licensing basis. [7]

Response: The NRC's regulatory processes, including the inspection program, ensure nuclear power plants meet the requirements and obligations of the license. When discrepancies are identified, they are corrected.

Comment: Expressed disappointment that no recent operation risk factors have been provided by NRC. [7]

Response: The IPE/IPEEE have been performed and examined the vulnerabilities (risk) to both internal and external initiating events. These issues are not part of this environmental analysis.

Comment: Licensing procedures should evaluate whether BGE has demonstrated "most successful achievers" standard. [40]

Response: The regulations for license renewal require that the applicant's facility be evaluated for safety and environmental factors. There is no requirement that the applicant has demonstrated "most successful achievement."

Comment: Lower air emissions from nuclear facilities is partially offset by venting of radioactive emissions. [7]

Response: *Nuclear power plants produce few gaseous effluents, and their impact on air quality is minimal. The amounts of radioactivity released through vents and discharge points to areas outside the plant boundaries are recorded and published semiannually.*

Comment: To ensure safety of nuclear power, regulators should not play "gotcha" and the regulated should not play "fooled-ya." [16]

Response: *The staff agrees.*

Comment: The speaker discussed his experimental method of potentially transmuting radioactive wastes into nonradioactive materials. [20]

Response: *This issue is outside the scope of license renewal and will not be evaluated further.*

TABLE 1

Commenter Number	Commenter's Name	Commenter's Affiliation (If Stated)
Afternoon Session of Public Scoping Meeting		
1	Barth Doroshuk - spoke at both afternoon and evening session	Project Director, Calvert Cliffs Nuclear Power Plant
2	Gary Hodge	Executive Director, Tri-County Council for Southern Maryland
3	Mary Krug (statement provided)	Calvert County Commissioner
4	Fred Hoover - spoke at both afternoon and evening session (statement provided)	Director, State of Maryland's Energy Administration
5	Nancy Smith (article provided)	Political Scientist, St. Mary's College
6	Paul Gunter	Nuclear Information and Research Service
7	James Riccio	Staff Attorney, Public Citizen's Critical Mass Energy Project
8	John D. Parran	
9	William Bowen	V.P., Calvert County Chamber of Commerce
10	George Abbe (statement provided)	Senior Scientist, Academy of Natural Sciences Estuarine Research Center
11	Bonnie Bick	Conservation Chair, Southern Maryland Group
12	Bill Johnston (letter also received during comment period)	
13	Jay Lounsbury	President, Dunkirk Area Concerned Citizens Association
14	Angie Howard	Senior V.P., Nuclear Energy Institute
15	Lucy Oppenheim	Anne Arundel Peace Action
16	Ruth Wolf	United Way Board, Calvert County

Commenter Number	Commenter's Name	Commenter's Affiliation (If Stated)
17	Hal Maurer (statement provided)	Federation of Southern Calvert Communities
18	Darren Adair	
19	Debra Adair	
20	Dr. Robert Bass	Retired professor of physics and astronomy
21	Tom Rosetti	Representing self (Senior Engineer, BGE)
22	Lea Johnston (statement provided)	Maryland Public Interest Research Group
Evening Session of Public Scoping Meeting		
23	Sarah Ebenreck (letter also received during comment period)	
24	Michael Moore	Former County Commissioner
25	Glen Besa	Regional representative of Sierra Club
26	Theodore Rockwell	
27	Michael Smolek	Director, Jefferson-Patterson Park and Museum
28	Richard Ochs (statement given by K. Dellinger - letter also received during comment period)	President, Maryland Safe Energy Coalition
29	Kay Dellinger	
30	David Hale	
31	Chris Bedford	Chair, Maryland Chapter of Sierra Club
32	Ralph Beedle	Senior V.P., Nuclear Energy Institute
33	Eric Jansson	President, Potomac River Association
34	Michael Martin	Sierra Student Coalition
35	Tony Russo	Associate with International Institute in Toronto
36	Tyla Mattison	
37	William Roosenburg	

Commenter Number	Commenter's Name	Commenter's Affiliation (If Stated)
Letters Received in Comment Period following Scoping Meeting (Authors who also spoke during the public comment meeting are listed above)		
38	Sheldon Samuels	V.P., The Ramazzini Institute
39	Richard McLean	Maryland Department of Natural Resources
40	Bob Auerbach	Chairman, The Greenbelt Greens