

November 18, 2008

MEMORANDUM TO: William Burton, Branch Chief  
Environmental Projects Branch 1  
Division of Site and Environmental Reviews  
Office of New Reactors

FROM: Donald Palmrose, Project Manager */RA/*  
Environmental Projects Branch 1  
Division of Site and Environmental Reviews  
Office of New Reactors

SUBJECT: SCOPING SUMMARY REPORT RELATED TO THE ENVIRONMENTAL  
SCOPING PROCESS FOR THE SHEARON HARRIS NUCLEAR  
POWER PLANT, UNITS 2 AND 3 COMBINED LICENSE APPLICATION

The U.S. Nuclear Regulatory Commission (NRC) conducted a scoping process from May 22 – July 25, 2008, to determine the scope of the NRC staff's environmental review of the combined license application for the Shearon Harris Nuclear Power Plant, Units 2 and 3 (HAR). As part of the scoping process the NRC staff held a public scoping meeting in Holly Springs, North Carolina on June 10, 2008, to solicit public input regarding the scope of the environmental review.

The NRC staff has prepared the enclosed Scoping Summary Report which identifies comments received either at the public scoping meeting, by letter, or by electronic mail and provides responses to those comments. In accordance with 10 CFR 51.29(b), all participants of the scoping process will be provided with a copy of the scoping summary report. The transcripts of the scoping meeting are publicly available in ADAMS under accession numbers ML08179024 and ML081790250.

The next step in the environmental review process is the issuance of a draft Environmental Impact Statement (EIS) scheduled for June 2009. Notice of the availability of the draft EIS and the procedures for providing comments will be published in an upcoming *Federal Register* Notice.

CONTACT: Donald Palmrose, DSER/RAP1  
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Tomeka Terry, DSER/RAP1  
301-415-1488

Docket Nos.: 52-022 and 52-023

Enclosure: Scoping Summary Report

Distribution: w/encl. See next page

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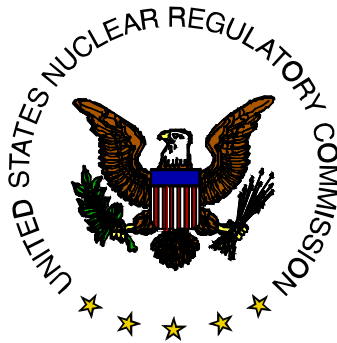
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**Environmental Impact Statement  
Scoping Process**

**Summary Report**

**Shearon Harris Combined License  
Wake County, North Carolina**

**October 2008**



**U.S. Nuclear Regulatory Commission  
Rockville, Maryland**

## Introduction

On February 18, 2008, Progress Energy Carolinas, Inc. (PEC) submitted to the U.S. Nuclear Regulatory Commission (NRC) an application for a combined license (COL) for construction and operation of two new commercial nuclear power reactors at its Shearon Harris Nuclear Power Plant (HAR) Site. The HAR site is located in the southwestern corner of Wake County, North Carolina, approximately 22 miles southeast of Raleigh, North Carolina.

As part of the application, PEC submitted an environmental report (ER) prepared in accordance with the requirements of Title 10 of the *Code of Federal Regulations* (CFR) Part 51 and 10 CFR Part 52. The ER focuses on potential environmental effects from the construction and operation of two new nuclear units at the HAR site. It also includes an evaluation of the environmental consequences of alternatives, including the proposed actions and any mitigating actions that may be taken. NRC regulations implementing the National Environmental Policy Act (NEPA) of 1969, as amended, are contained in 10 CFR Part 51, Subpart A. In addition, the NRC follows the Council on Environmental Quality regulations to the extent set forth in 10 CFR 51.10 and 10 CFR 51.14(b). NRC regulations related to the environmental review of COL applications are contained in 10 CFR Part 51 and 10 CFR 52, Subpart C.

The NRC staff is preparing an environmental impact statement (EIS) in conjunction with the PEC application. The proposed action is NRC approval of the PEC application to build and operate two new base-load nuclear power generation facilities (new units), Shearon Harris, Units 2 and 3, to be located within the existing HAR site. The EIS will include an evaluation of the environmental impacts of the proposed action and the environmental impacts of alternatives to the proposed action including the no-action alternative, alternatives related to the facility cooling and circulating water systems, and alternatives available for reducing or avoiding adverse environmental effects in accordance with NUREG-1555, *Standard Review Plan for Environmental Reviews for Nuclear Power Plants*. It also will address alternative energy options. Finally, the EIS will include an evaluation of alternative sites to determine if there is an obviously superior alternative to the proposed site. In addition, the staff is conducting a safety review of the PEC combined license application in accordance with NUREG-0800, *Standard Review Plans for the Review of Safety Analysis for Nuclear Power Plants*.

On May 22, 2008, in accordance with 10 CFR 51.26, the NRC initiated the scoping process by publishing a Notice of Intent to Prepare an Environmental Impact Statement and Conduct Scoping Process in the *Federal Register* (73 FR 29785), with a correction published in the *Federal Register* (73 FR 31892) on June 4, 2008. The Notice of Intent notified the public of the staff's intent to prepare an EIS and conduct scoping for the COL application. Through the notice, the NRC also invited the applicant; Federal, Tribal, State, and local government agencies; local organizations; and individuals to participate in the scoping process by providing oral comments at the public meetings and/or submitting written suggestions and comments no later than July 25, 2008.

The scoping process provides an opportunity for public participation to identify issues to be addressed in the EIS and highlight public concerns and issues. The Notice of Intent identified the following objectives of the scoping process:

- Define the proposed action that is to be the subject of the EIS.
- Determine the scope of the EIS, and identify significant issues to be analyzed in depth.
- Identify and eliminate from detailed study those issues that are peripheral or that are not significant.
- Identify any environmental assessments and other EISs that are being prepared or will be prepared that are related to, but not part of, the scope of the EIS being considered.
- Identify other environmental review and consultation requirements related to the proposed action.
- Identify parties consulting with the NRC under the National Historic Preservation Act, as set forth in 36 CFR 800.8(c)(1)(i).
- Indicate the relationship between the timing of the preparation of the environmental analyses and the NRC's tentative planning and decision-making schedule.
- Identify any cooperating agencies and, as appropriate, allocate assignments for preparation and schedules for completing the EIS to the NRC and any cooperating agencies.
- Describe how the EIS will be prepared, and identify any contractor assistance to be used.

At the conclusion of the scoping period, the NRC staff and its contractor reviewed the transcripts of the scoping meetings and all written material received and identified individual comments. The transcripts can be found under accession numbers ML081790243 and ML081790250 in the NRC's Agency Document Access and Management System (ADAMS), which is accessible from the NRC website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room) (note that the URL is case-sensitive). In addition, 14 letters and 24 emails containing comments were received during the scoping period. All comments and suggestions received orally during the scoping meeting or in writing were considered by the NRC staff.

The public scoping meetings were held at the Holly Springs Cultural Center in Holly Springs, North Carolina on June 10, 2008. The NRC announced the meeting in local newspapers (the *Pilot*, the *News & Observer*, and the *Sanford Herald*), issued press releases, and distributed flyers locally. Approximately 132 members of the public attended the afternoon scoping meeting, and approximately 132 attended the evening session. The scoping meetings began with NRC staff members providing a brief overview of NRC's review process for COL applications and the NEPA process. After the NRC's prepared statements, the meeting was opened for public comments. Eighteen (18) afternoon scoping meeting attendees and 16 evening scoping meeting attendees provided either written statements or oral comments that were recorded and transcribed by a certified court reporter. The transcripts of the meetings can be found as an attachment to the meeting summary, which was issued on July 1, 2008. The meeting summary and transcripts are available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of ADAMS under accession number ML081790294.

Table 1 identifies the individuals providing comments in alphabetical order, their affiliation, if given, the ADAMS accession number that can be used to locate the correspondence, and the correspondence ID used in Table 3 to identify individual comments. Accession numbers indicate the location of the written comments in ADAMS.

Comments were consolidated and categorized according to topic within the proposed EIS or according to the general topic if outside the scope of the EIS. Comments with similar specific objectives were combined to capture the common essential issues that had been raised in the source comments. Once comments were grouped according to subject area, the NRC staff determined the appropriate response for the comment. The comment categories are listed in Table 2 in the order that they are presented in this document.

Table 3 lists the comment categories in the order they are presented in this document with commenter names and comment identification numbers for the comments that were binned into each category.

**Table 1.** Individuals Providing Comments During the Comment Period

<b>Commenter</b>	<b>Affiliation (if stated)</b>	<b>Comment Source and ADAMS Accession #</b>	<b>Correspondence ID Number</b>
Adams, C.A.		Letter (ML081780363)	0007
Badrock, Anita		Meeting Transcript (ML081790250)	0002
Blackburn, Jeanne		Letter (ML081750186)	0004
Bonitz, John	Chatham Alliance for Sustainable Energy	Email (ML082100065)	0022
Brown, Stephen J.	Town of Cary	Letter (ML082200040)	0026
Brown, Stephen J.	Western Wake Regional Wastewater Management Facilities	Letter (ML082200039)	0027
Bryan, Joe		Meeting Transcript (ML081790243)	0001
Bryan, Joe	Wake County Board of Commissioners	Letter (ML082520360)	0030
Burriss, Mike	Wake County Schools	Meeting Transcript (ML081790243)	0001
Cammarata, Sal		Meeting Transcript (ML081790250)	0002
Cann-Woode, Nina	Clean and Safe Energy Coalition	Meeting Transcript (ML081790243) Meeting Transcript (ML081790250)	0001 0002
Chiosso, Elaine	Haw Riverkeeper, Haw River Assembly	Email (ML082100066)	0023
Cowles, June		Email (ML082040787)	0012
Craig, Lee	North Carolina State University	Meeting Transcript (ML081790250)	0002
Crandall, Van		Meeting Transcript (ML081790243)	0001
Cross, Wayne		Email (ML082050309)	0016
Cullington, Liz	Chatham Alliance for Sustainable Energy	Email (ML082100059) Email (ML082100065)	0022
Cullington, Liz		Letter (ML082520362) Meeting Transcript (ML081790250)	0028 0002
DeBenedetto, Vinnie		Meeting Transcript (ML081790243)	0001
Dukes, Patty	Chatham Alliance for Sustainable Energy	Email (ML082100065)	0022
Eads, Don	Chatham Alliance for Sustainable Energy	Email (ML082100065)	0022
Ebert, S. Lewis	North Carolina Chamber	Letter (ML081750263)	0006

**Table 1. (contd)**

<b>Commenter</b>	<b>Affiliation (if stated)</b>	<b>Comment Source and ADAMS Accession #</b>	<b>Correspondence ID Number</b>
Ellison, Margie	Chatham Alliance for Sustainable Energy	Email (ML082100065)	0022
Fain, Jim	State of North Carolina	Meeting Transcript (ML081790250)	0002
Flythe, Jim		Letter (ML081750185)	0003
Funderlic, Bob	North Carolina State University	Meeting Transcript (ML081790250)	0002
Gauss, Tim	Town of Morrisville	Email (ML082070190)	0021
Gilbert, Bob		Meeting Transcript (ML081790243)	0001
Goodwin, David L.	Wake County General Services Administration	Meeting Transcript (ML081790250)	0002
Griffin, Eric	Lee County	Meeting Transcript (ML081790243)	0001
Herts, Bob		Meeting Transcript (ML081790243)	0001
Holleman, Gerald		Meeting Transcript (ML081790243)	0001
Hummel, Bill	Clean and Safe Energy Coalition	Meeting Transcript (ML081790243)	0001
		Meeting Transcript (ML081790250)	0002
Jacobs, Barry	Orange County Board of Commissioners	Letter (ML082240185)	0031
Johnson, Kevin	Research Triangle Park	Meeting Transcript (ML081790250)	0002
Joyce, Bob	Sanford Area Chamber of Commerce	Meeting Transcript (ML081790243)	0001
Keto, Evan		Email (ML082040783)	0010
King, Ed	Chatham Alliance for Sustainable Energy	Email (ML082100065)	0022
Maher, Jim		Email (ML082050311)	0018
Manuele, Jean B.	Wilmington District, Corps of Engineers	Letter (ML082000779)	0033
McDowell, Mary		Meeting Transcript (ML081790243)	0001
Meyer, Nick	Chatham Alliance for Sustainable Energy	Email (ML082100065)	0022
Modeen, Jessica		Email (ML082040785)	0011
Moretz, Drew	The Greater Raleigh Chamber of Commerce	Email (ML082040779 )	0009
Norden, Roger		Email (ML082040792)	0015
Pactin, Judy		Letter (ML082200037)	0024



**Table 1. (contd)**

<b>Commenter</b>	<b>Affiliation (if stated)</b>	<b>Comment Source and ADAMS Accession #</b>	<b>Correspondence ID Number</b>
Pinnix-Ragland, Hilda	Progress Energy	Meeting Transcript (ML081790243)	0001
		Meeting Transcript (ML081790250)	0002
Porter, Barry	American Red Cross	Meeting Transcript (ML081790250)	0002
Radford, Bruce	City of Apex	Email (ML082060474)	0020
Ragsdale, Lee	North Carolina Electric Membership Corporation	Meeting Transcript (ML081790250)	0002
Royal, Lil	Chatham Alliance for Sustainable Energy	Email (ML082100059)	0022
Runkle, John D.		Letter (ML081750187)	0005
		Meeting Transcript (ML081790243)	0001
Rupprecht, Diane	KB Home	Meeting Transcript (ML081790243)	0001
Sandbeck, Peter	North Carolina Department of Cultural Resources	Letter (ML081920290)	0032
Sauls, James	Wake County Economic Development	Meeting Transcript (ML081790250)	0002
Schwankl, Audrey	Chatham Alliance for Sustainable Energy	Email (ML082100059)	0022
Schwankl, Audrey		Meeting Transcript (ML081790250)	0002
Schwankl, Jimmy	Chatham Alliance for Sustainable Energy	Email (ML082100059)	0022
Sears, Dick	Town of Holly Springs	Email (ML082050312)	0019
Smelcer, Donald		Email (ML082050310)	0017
Smith, Jane	Lee County	Meeting Transcript (ML081790243)	0001
Stancil, Vann	North Carolina Wildlife Resources Commission	Letter (ML082620366)	0034
Susann, Marian		Email (ML082040791)	0014
Sutherland, John	NC Dept of Environment and Natural Resources	Letter (ML082520361)	0029
Turk, Lawrence "Butch"		Email (ML082040759 )	0008
Warren, Jim	NC Warn	Meeting Transcript (ML081790243)	0001
Weintraub, Sasha	Progress Energy Carolinas	Meeting Transcript (ML081790250)	0002

**Table 1. (contd)**

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Winters, Mike	Meeting Transcript (ML081790243)	0001
Womble, Wallace and Pansy	Letter (ML082200038)	0025
Woodard, Carl H. and Sandra J.	Email (ML082040788)	0013

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**Table 2.** Comment Categories in Order as Presented in this Report

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1. Comments Concerning Process – COL
  2. Comments Concerning Process – NEPA
  3. Comments Concerning Site Layout and Design
  4. Comments Concerning Land Use – Site and Vicinity
  5. Comments Concerning Land Use – Transmission Lines
  6. Comments Concerning Meteorology and Air Quality
  7. Comments Concerning Hydrology – Surface Water
  8. Comments Concerning Hydrology – Groundwater
  9. Comments Concerning Ecology – Terrestrial
  10. Comments Concerning Ecology – Aquatic
  11. Comments Concerning Socioeconomics
  12. Comments Concerning Historic and Cultural Resources
  13. Comments Concerning Environmental Justice
  14. Comments Concerning Health – Nonradiological
  15. Comments Concerning Health – Radiological
  16. Comments Concerning Accidents – Design Basis
  17. Comments Concerning the Uranium Fuel Cycle
  18. Comments Concerning Transportation
  19. Comments Concerning Decommissioning
  20. Comments Concerning Cumulative Impacts
  21. Comments Concerning Related Federal Projects
  22. Comments Concerning the Need for Power
  23. Comments Concerning Alternatives – No-Action
  24. Comments Concerning Alternatives – Energy
  25. Comments Concerning Alternatives – System Design
  26. Comments Concerning Alternatives – Sites
  27. Comments Concerning Benefit-Cost Balance
  28. General Comments in Support of the Licensing Action
  29. General Comments in Support of the Licensing Process
  30. General Comments of Support of Nuclear Power
  31. General Comments in Support of the Existing Plant
  32. General Comments in Opposition to the Licensing Action
  33. General Comments in Opposition to the Licensing Process
  34. General Comments in Opposition to Nuclear Power
  35. General Comments in Opposition to the Existing Plant
  36. Comments Concerning Issues Outside Scope – Emergency Preparedness
  37. Comments Concerning Issues Outside Scope – Miscellaneous
  38. Comments Concerning Issues Outside Scope – NRC Oversight
  39. Comments Concerning Issues Outside Scope – Safety
  40. Comments Concerning Issues Outside Scope – Security and Terrorism
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**Table 3. Comment Categories with Associated Commenters and Comment IDs**

<b>Comment Category</b>	<b>Commenter (Comment ID)</b>
Process - COL	<ul style="list-style-type: none"> <li>• Bonitz, John (0022-6) (0022-8)</li> <li>• Cowles, June (0012-1) (0012-2)</li> <li>• Cullington, Liz (0002-58) (0022-6) (0022-8) (0028-184)</li> <li>• Dukes, Patty (0022-6) (0022-8)</li> <li>• Eads, Don (0022-6) (0022-8)</li> <li>• Ellison, Margie (0022-6) (0022-8)</li> <li>• Keto, Evan (0010-1) (0010-13)</li> <li>• King, Ed (0022-6) (0022-8)</li> <li>• Manuele, Jean B. (0033-2)</li> <li>• Meyer, Nick (0022-6) (0022-8)</li> <li>• Royal, Lil (0022-6) (0022-8)</li> <li>• Runkle, John D. (0001-84) (0005-24)</li> <li>• Schwankl, Audrey (0022-6) (0022-8)</li> <li>• Schwankl, Jimmy (0022-6) (0022-8)</li> </ul>
Process - NEPA	<ul style="list-style-type: none"> <li>• Chiosso, Elaine (0023-8)</li> <li>• Griffin, Eric (0001-32)</li> <li>• Keto, Evan (0010-15) (0010-35)</li> <li>• Runkle, John D. (0001-85) (0005-1)</li> </ul>
Site Layout and Design	<ul style="list-style-type: none"> <li>• Bonitz, John (0022-2)</li> <li>• Chiosso, Elaine (0023-4)</li> <li>• Cullington, Liz (0002-80) (0022-2) (0028-45) (0028-48) (0028-123) (0028-124) (0028-195)</li> <li>• Dukes, Patty (0022-2)</li> <li>• Eads, Don (0022-2)</li> <li>• Ellison, Margie (0022-2)</li> <li>• Jacobs, Barry (0031-10)</li> <li>• King, Ed (0022-2)</li> <li>• Meyer, Nick (0022-2)</li> <li>• Royal, Lil (0022-2)</li> <li>• Schwankl, Audrey (0022-2)</li> <li>• Schwankl, Jimmy (0022-2)</li> </ul>
Land Use - Site and Vicinity	<ul style="list-style-type: none"> <li>• Bryan, Joe (0030-3)</li> <li>• Cullington, Liz (0028-1) (0028-2) (0028-8) (0028-11) (0028-12) (0028-13) (0028-15) (0028-26) (0028-106) (0028-128) (0028-132) (0028-142) (0028-145) (0028-153) (0028-154) (0028-155) (0028-158) (0028-160) (0028-171) (0028-174) (0028-175) (0028-189) (0028-190) (0028-196) (0028-197) (0028-211) (0028-215) (0028-217) (0028-231) (0028-232) (0028-238) (0028-254)</li> <li>• DeBenedetto, Vinnie (0001-8)</li> <li>• Pinnix-Ragland, Hilda (0001-23) (0001-24) (0002-31) (0002-32)</li> <li>• Sears, Dick (0019-3) (0019-4) (0019-5) (0019-9)</li> </ul>

**Table 3. (contd)**

<b>Comment Category</b>	<b>Commenter (Comment ID)</b>
Land Use - Transmission Lines	<ul style="list-style-type: none"> <li>• Cullington, Liz (0002-59) (0002-66) (0028-5) (0028-24) (0028-59) (0028-61) (0028-107) (0028-126) (0028-193) (0028-216) (0028-250) (0028-14) (0028-16) (0028-119) (0028-134) (0028-135) (0028-136) (0028-137) (0028-159) (0028-172) (0028-173) (0028-204) (0028-223) (0028-224)</li> </ul>
Meteorology and Air Quality	<ul style="list-style-type: none"> <li>• Keto, Evan (0010-30)</li> <li>• McDowell, Mary (0001-126) (0001-128)</li> <li>• Runkle, John D. (0005-16) (0005-18)</li> <li>• Turk, Lawrence "Butch" (0008-2)</li> </ul>
Hydrology - Surface Water	<ul style="list-style-type: none"> <li>• Blackburn, Jeanne (0004-3)</li> <li>• Bonitz, John (0022-4) (0022-5) (0022-7)</li> <li>• Brown, Stephen J. (0026-1) (0027-1)</li> <li>• Chiosso, Elaine (0023-5) (0023-6)</li> <li>• Cullington, Liz (0002-64) (0002-68) (0002-69) (0022-4) (0022-5) (0022-7) (0028-3) (0028-4) (0028-6) (0028-17) (0028-18) (0028-20) (0028-21) (0028-22) (0028-23) (0028-25) (0028-27) (0028-28) (0028-29) (0028-30) (0028-32) (0028-35) (0028-36) (0028-37) (0028-40) (0028-41) (0028-42) (0028-43) (0028-44) (0028-46) (0028-108) (0028-109) (0028-110) (0028-111) (0028-112) (0028-113) (0028-114) (0028-127) (0028-130) (0028-131) (0028-133) (0028-143) (0028-146) (0028-157) (0028-161) (0028-164) (0028-176) (0028-179) (0028-180) (0028-186) (0028-198) (0028-218) (0028-220) (0028-221) (0028-255) (0028-257)</li> <li>• DeBenedetto, Vinnie (0001-3) (0001-5)</li> <li>• Dukes, Patty (0022-4) (0022-5) (0022-7)</li> <li>• Eads, Don (0022-4) (0022-5) (0022-7)</li> <li>• Ellison, Margie (0022-4) (0022-5) (0022-7)</li> <li>• Gauss, Tim (0021-1) (0021-2)</li> <li>• Griffin, Eric (0001-31)</li> <li>• Holleman, Gerald (0001-94)</li> <li>• Jacobs, Barry (0031-11)</li> <li>• Keto, Evan (0010-22) (0010-26)</li> <li>• King, Ed (0022-4) (0022-5) (0022-7)</li> <li>• Meyer, Nick (0022-4) (0022-5) (0022-7)</li> <li>• Pinnix-Ragland, Hilda (0001-22) (0001-26) (0002-30)</li> <li>• Radford, Bruce (0020-4) (0020-5)</li> <li>• Royal, Lil (0022-4) (0022-5) (0022-7)</li> <li>• Runkle, John D. (0001-90) (0005-12) (0005-14) (0005-15) (0005-17)</li> <li>• Sauls, James (0002-9)</li> <li>• Schwankl, Audrey (0022-4) (0022-5) (0022-7)</li> <li>• Schwankl, Jimmy (0022-4) (0022-5) (0022-7)</li> <li>• Sears, Dick (0019-1) (0019-2) (0019-7)</li> <li>• Smith, Jane (0001-55) (0001-56) (0001-57) (0001-59) (0001-60)</li> </ul>

**Table 3. (contd)**

<b>Comment Category</b>	<b>Commenter (Comment ID)</b>
	(0001-61) (0001-67) <ul style="list-style-type: none"> <li>• Stancil, Vann (0034-9) (0034-11) (0034-12)</li> <li>• Sutherland, John (0029-1) (0029-2) (0029-3) (0029-4) (0029-5)</li> <li>• Turk, Lawrence "Butch" (0008-9)</li> </ul>
Hydrology - Groundwater	<ul style="list-style-type: none"> <li>• Cullington, Liz (0028-19) (0028-47) (0028-98) (0028-105) (0028-177) (0028-191)</li> <li>• DeBenedetto, Vinnie (0001-6)</li> <li>• McDowell, Mary (0001-137)</li> <li>• Smith, Jane (0001-58)</li> </ul>
Ecology - Terrestrial	<ul style="list-style-type: none"> <li>• Cullington, Liz (0028-31) (0028-115) (0028-116) (0028-144) (0028-147) (0028-150) (0028-156) (0028-166) (0028-169) (0028-178) (0028-201) (0028-202) (0028-239)</li> <li>• Manuele, Jean B. (0033-1) (0033-3) (0033-4) (0033-5) (0033-6) (0033-8)</li> <li>• Stancil, Vann (0034-3) (0034-4) (0034-5) (0034-6) (0034-8)</li> </ul>
Ecology - Aquatic	<ul style="list-style-type: none"> <li>• Cullington, Liz (0028-117) (0028-129) (0028-162) (0028-165) (0028-219)</li> <li>• Runkle, John D. (0005-13)</li> <li>• Sutherland, John (0029-6) (0029-7)</li> <li>• Stancil, Vann (0034-2) (0034-10)</li> </ul>
Socioeconomics	<ul style="list-style-type: none"> <li>• Badrock, Anita (0002-50)</li> <li>• Bryan, Joe (0001-10) (0001-13) (0001-15) (0030-2)</li> <li>• Craig, Lee (0002-15) (0002-16) (0002-17) (0002-18) (0002-19)</li> <li>• Cullington, Liz (0028-10) (0028-53) (0028-104) (0028-199) (0028-206) (0028-209) (0028-210) (0028-212) (0028-213) (0028-225) (0028-226) (0028-228) (0028-229) (0028-230) (0028-233) (0028-235) (0028-244) (0028-247) (0028-248) (0028-249) (0028-256)</li> <li>• DeBenedetto, Vinnie (0001-2)</li> <li>• Ebert, S. Lewis (0006-6)</li> <li>• Fain, Jim (0002-39) (0002-42)</li> <li>• Holleman, Gerald (0001-96) (0001-97)</li> <li>• Hummel, Bill (0002-110)</li> <li>• Joyce, Bob (0001-36) (0001-37) (0001-39) (0001-40)</li> <li>• Keto, Evan (0010-20)</li> <li>• Pinnix-Ragland, Hilda (0001-17)</li> <li>• Radford, Bruce (0020-3)</li> <li>• Runkle, John D. (0001-81) (0001-86) (0005-4)</li> <li>• Sauls, James (0002-7) (0002-8) (0002-11) (0002-12)</li> <li>• Schwankl, Audrey (0002-86)</li> <li>• Sears, Dick (0019-6) (0019-8)</li> <li>• Stancil, Vann (0034-1) (0034-7)</li> <li>• Winters, Mike (0001-71)</li> </ul>

**Table 3. (contd)**

<b>Comment Category</b>	<b>Commenter (Comment ID)</b>
Historic and Cultural Resources	<ul style="list-style-type: none"> <li>• Cullington, Liz (0028-205)</li> <li>• Sandbeck, Peter (0032-1)</li> </ul>
Environmental Justice	<ul style="list-style-type: none"> <li>• Cullington, Liz (0028-118) (0028-234)</li> </ul>
Health - Nonradiological	<ul style="list-style-type: none"> <li>• Cullington, Liz (0028-203) (0028-207) (0028-222)</li> </ul>
Health - Radiological	<ul style="list-style-type: none"> <li>• Cullington, Liz (0028-148) (0028-149) (0028-151) (0028-167) (0028-168) (0028-170) (0028-214) (0028-237)</li> <li>• Hummel, Bill (0001-122) (0002-108)</li> <li>• McDowell, Mary (0001-135)</li> </ul>
Accidents - Design Basis	<ul style="list-style-type: none"> <li>• Cullington, Liz (0028-121)</li> </ul>
Uranium Fuel Cycle	<ul style="list-style-type: none"> <li>• Bonitz, John (0022-17)</li> <li>• Chiosso, Elaine (0023-10)</li> <li>• Crandall, Van (0001-99) (0001-100) (0001-101) (0001-102) (0001-103)</li> <li>• Cross, Wayne (0016-2)</li> <li>• Cullington, Liz (0002-63) (0022-17) (0028-182) (0028-183) (0028-187) (0028-188) (0028-192) (0028-194)</li> <li>• Dukes, Patty (0022-17)</li> <li>• Eads, Don (0022-17)</li> <li>• Ellison, Margie (0022-17)</li> <li>• Gilbert, Bob (0001-116)</li> <li>• Jacobs, Barry (0031-1) (0031-7)</li> <li>• Keto, Evan (0010-32) (0010-34)</li> <li>• King, Ed (0022-17)</li> <li>• McDowell, Mary (0001-132) (0001-136)</li> <li>• Meyer, Nick (0022-17)</li> <li>• Modeen, Jessica (0011-7) (0011-8)</li> <li>• Royal, Lil (0022-17)</li> <li>• Runkle, John D. (0001-91) (0001-92) (0005-20) (0005-21) (0005-22)</li> <li>• Schwankl, Audrey (0022-17)</li> <li>• Schwankl, Jimmy (0022-17)</li> <li>• Smith, Jane (0001-62) (0001-63) (0001-64) (0001-65) (0001-68)</li> <li>• Turk, Lawrence "Butch" (0008-7)</li> <li>• Warren, Jim (0001-48) (0001-49) (0001-50)</li> <li>• Womble, Wallace and Pansy (0025-2) (0025-3)</li> </ul>
Transportation	<ul style="list-style-type: none"> <li>• Cullington, Liz (0028-208)</li> </ul>

**Table 3. (contd)**

<b>Comment Category</b>	<b>Commenter (Comment ID)</b>
Decommissioning	<ul style="list-style-type: none"> <li>• Keto, Evan (0010-31)</li> </ul>
Cumulative Impacts	<ul style="list-style-type: none"> <li>• Manuele, Jean B. (0033-7)</li> </ul>
Related Federal Projects	<ul style="list-style-type: none"> <li>• Brown, Stephen J. (0026-2)</li> <li>• Gauss, Tim (0021-3)</li> </ul>
Need for Power	<ul style="list-style-type: none"> <li>• Bonitz, John (0022-14)</li> <li>• Bryan, Joe (0001-11) (0030-1)</li> <li>• Cann-Woode, Nina (0001-106) (0001-108) (0002-104)</li> <li>• Craig, Lee (0002-14)</li> <li>• Cullington, Liz (0002-71) (0002-72) (0002-73) (0002-74) (0022-14) (0028-50) (0028-51) (0028-52) (0028-54) (0028-55) (0028-56) (0028-57) (0028-60) (0028-62) (0028-97) (0028-181) (0028-246)</li> <li>• Dukes, Patty (0022-14)</li> <li>• Eads, Don (0022-14)</li> <li>• Ellison, Margie (0022-14)</li> <li>• Fain, Jim (0002-41) (0002-43) (0002-44)</li> <li>• Goodwin, David L. (0002-1)</li> <li>• Griffin, Eric (0001-30)</li> <li>• Herts, Bob (0001-75)</li> <li>• Hummel, Bill (0001-117)</li> <li>• Jacobs, Barry (0031-9)</li> <li>• Johnson, Kevin (0002-34) (0002-35) (0002-36) (0002-37) (0002-38)</li> <li>• Keto, Evan (0010-2) (0010-3) (0010-4) (0010-5)</li> <li>• King, Ed (0022-14)</li> <li>• Maher, Jim (0018-3)</li> <li>• McDowell, Mary (0001-127)</li> <li>• Meyer, Nick (0022-14)</li> <li>• Modeen, Jessica (0011-3)</li> <li>• Moretz, Drew (0009-2)</li> <li>• Pinnix-Ragland, Hilda (0001-18) (0001-20) (0002-27) (0002-28)</li> <li>• Ragsdale, Lee (0002-20)</li> <li>• Royal, Lil (0022-14)</li> <li>• Runkle, John D. (0005-25)</li> <li>• Rupprecht, Diane (0001-78)</li> <li>• Sauls, James (0002-13)</li> <li>• Schwankl, Audrey (0002-92) (0022-14)</li> <li>• Schwankl, Jimmy (0022-14)</li> <li>• Smelcer, Donald (0017-4)</li> <li>• Susann, Marian (0014-1)</li> <li>• Warren, Jim (0001-52)</li> <li>• Winters, Mike (0001-70)</li> </ul>



**Table 3. (contd)**

<b>Comment Category</b>	<b>Commenter (Comment ID)</b>
Alternatives - No-Action	<ul style="list-style-type: none"> <li>• Keto, Evan (0010-6)</li> </ul>
Alternatives - Energy	<ul style="list-style-type: none"> <li>• Badrock, Anita (0002-52) (0002-54) (0002-56)</li> <li>• Bonitz, John (0022-12)</li> <li>• Burriss, Mike (0001-53)</li> <li>• Cullington, Liz (0002-60) (0002-61) (0002-75) (0002-76) (0002-77) (0002-78) (0002-79) (0022-12) (0028-9) (0028-58) (0028-63) (0028-64) (0028-65) (0028-66) (0028-67) (0028-68) (0028-69) (0028-70) (0028-71) (0028-72) (0028-73) (0028-74) (0028-75) (0028-76) (0028-77) (0028-78) (0028-79) (0028-80) (0028-81) (0028-82) (0028-83) (0028-84) (0028-85) (0028-86) (0028-87) (0028-88) (0028-89) (0028-90) (0028-91) (0028-92) (0028-93) (0028-94)</li> <li>• Dukes, Patty (0022-12)</li> <li>• Eads, Don (0022-12)</li> <li>• Ebert, S. Lewis (0006-3)</li> <li>• Ellison, Margie (0022-12)</li> <li>• Funderlic, Bob (0002-95) (0002-96)</li> <li>• Gilbert, Bob (0001-109) (0001-110) (0001-111)</li> <li>• Hummel, Bill (0001-118)</li> <li>• Joyce, Bob (0001-38)</li> <li>• Keto, Evan (0010-7) (0010-8) (0010-10) (0010-11) (0010-12) (0010-14) (0010-16) (0010-18) (0010-19) (0010-23) (0010-25) (0010-27)</li> <li>• King, Ed (0022-12)</li> <li>• Maher, Jim (0018-2) (0018-4)</li> <li>• Meyer, Nick (0022-12)</li> <li>• Pinnix-Ragland, Hilda (0001-19) (0002-29)</li> <li>• Royal, Lil (0022-12)</li> <li>• Runkle, John D. (0001-82) (0001-93) (0005-19) (0005-23)</li> <li>• Schwankl, Audrey (0022-12)</li> <li>• Schwankl, Jimmy (0022-12)</li> <li>• Turk, Lawrence "Butch" (0008-10)</li> <li>• Weintraub, Sasha (0002-47)</li> </ul>
Alternatives - System Design	<ul style="list-style-type: none"> <li>• Cullington, Liz (0028-125)</li> <li>• Keto, Evan (0010-29)</li> </ul>
Alternatives - Sites	<ul style="list-style-type: none"> <li>• Cullington, Liz (0028-33) (0028-95) (0028-96) (0028-99) (0028-100) (0028-101) (0028-102) (0028-103) (0028-120)</li> </ul>

**Table 3. (contd)**

<b>Comment Category</b>	<b>Commenter (Comment ID)</b>
Benefit-Cost Balance	<ul style="list-style-type: none"> <li>• Blackburn, Jeanne (0004-2)</li> <li>• Bonitz, John (0022-3) (0022-9) (0022-10) (0022-11)</li> <li>• Crandall, Van (0001-98)</li> <li>• Cullington, Liz (0002-65) (0002-67) (0022-3) (0022-9) (0022-10) (0022-11) (0028-7) (0028-122) (0028-138) (0028-139) (0028-140) (0028-185) (0028-227) (0028-240) (0028-241) (0028-242) (0028-243) (0028-245) (0028-251) (0028-252) (0028-253)</li> <li>• Dukes, Patty (0022-3) (0022-9) (0022-10) (0022-11)</li> <li>• Eads, Don (0022-3) (0022-9) (0022-10) (0022-11)</li> <li>• Ellison, Margie (0022-3) (0022-9) (0022-10) (0022-11)</li> <li>• Keto, Evan (0010-9) (0010-17) (0010-21) (0010-28) (0010-33)</li> <li>• King, Ed (0022-3) (0022-9) (0022-10) (0022-11)</li> <li>• Meyer, Nick (0022-3) (0022-9) (0022-10) (0022-11)</li> <li>• Royal, Lil (0022-3) (0022-9) (0022-10) (0022-11)</li> <li>• Runkle, John D. (0001-80) (0001-83)</li> <li>• Schwankl, Audrey (0002-89) (0002-90) (0002-91) (0022-3) (0022-9) (0022-10) (0022-11)</li> <li>• Schwankl, Jimmy (0022-3) (0022-9) (0022-10) (0022-11)</li> <li>• Turk, Lawrence "Butch" (0008-3) (0008-4) (0008-6)</li> <li>• Warren, Jim (0001-44) (0001-45) (0001-47)</li> </ul>
Support - Licensing Action	<ul style="list-style-type: none"> <li>• Adams, C.A. (0007-1)</li> <li>• Badrock, Anita (0002-53) (0002-57)</li> <li>• Bryan, Joe (0030-5)</li> <li>• Cammarata, Sal (0002-99)</li> <li>• Cann-Woode, Nina (0002-102)</li> <li>• Ebert, S. Lewis (0006-1)</li> <li>• Fain, Jim (0002-46)</li> <li>• Flythe, Jim (0003-1)</li> <li>• Griffin, Eric (0001-29) (0001-33)</li> <li>• Hummel, Bill (0001-125) (0002-111)</li> <li>• Joyce, Bob (0001-42)</li> <li>• Maher, Jim (0018-1)</li> <li>• Modeen, Jessica (0011-2)</li> <li>• Moretz, Drew (0009-1) (0009-4)</li> <li>• Pinnix-Ragland, Hilda (0001-28)</li> <li>• Radford, Bruce (0020-1)</li> <li>• Ragsdale, Lee (0002-22) (0002-24) (0002-26)</li> <li>• Rupperecht, Diane (0001-79)</li> <li>• Sauls, James (0002-6)</li> <li>• Smelcer, Donald (0017-1)</li> <li>• Susann, Marian (0014-2)</li> <li>• Weintraub, Sasha (0002-48)</li> <li>• Woodard, Carl H. and Sandra J. (0013-2)</li> </ul>

**Table 3. (contd)**

<b>Comment Category</b>	<b>Commenter (Comment ID)</b>
Support - Licensing Process	<ul style="list-style-type: none"><li>• Herts, Bob (0001-73) (0001-77)</li><li>• Winters, Mike (0001-72)</li></ul>
Support - Nuclear Power	<ul style="list-style-type: none"><li>• Adams, C.A. (0007-2) (0007-3)</li><li>• Badrock, Anita (0002-49) (0002-51) (0002-55)</li><li>• Cammarata, Sal (0002-97)</li><li>• Cann-Woode, Nina (0001-105) (0001-107) (0002-103) (0002-105) (0002-106)</li><li>• Ebert, S. Lewis (0006-2) (0006-4)</li><li>• Fain, Jim (0002-40) (0002-45)</li><li>• Flythe, Jim (0003-2) (0003-3)</li><li>• Funderlic, Bob (0002-94)</li><li>• Herts, Bob (0001-76)</li><li>• Hummel, Bill (0001-119) (0001-120) (0001-121) (0001-123) (0002-107) (0002-109)</li><li>• Joyce, Bob (0001-34)</li><li>• Modeen, Jessica (0011-1) (0011-4) (0011-5) (0011-9)</li><li>• Norden, Roger (0015-1)</li><li>• Pinnix-Ragland, Hilda (0001-21)</li><li>• Ragsdale, Lee (0002-21) (0002-23) (0002-25)</li><li>• Woodard, Carl H. and Sandra J. (0013-1)</li></ul>
Support - Existing Plant	<ul style="list-style-type: none"><li>• Bryan, Joe (0001-9) (0001-12) (0001-14) (0001-16) (0030-4)</li><li>• Burriss, Mike (0001-54)</li><li>• Cammarata, Sal (0002-98)</li><li>• Cann-Woode, Nina (0001-104)</li><li>• Ebert, S. Lewis (0006-5)</li><li>• Goodwin, David L. (0002-2) (0002-3) (0002-4) (0002-5)</li><li>• Herts, Bob (0001-74)</li><li>• Hummel, Bill (0001-124)</li><li>• Joyce, Bob (0001-35) (0001-41)</li><li>• Moretz, Drew (0009-3)</li><li>• Pinnix-Ragland, Hilda (0001-25) (0001-27) (0002-33)</li><li>• Porter, Barry (0002-100)</li><li>• Sauls, James (0002-10)</li><li>• Smelcer, Donald (0017-2)</li><li>• Winters, Mike (0001-69)</li></ul>

**Table 3. (contd)**

<b>Comment Category</b>	<b>Commenter (Comment ID)</b>
Opposition - Licensing Action	<ul style="list-style-type: none"> <li>• Blackburn, Jeanne (0004-4)</li> <li>• Bonitz, John (0022-1) (0022-15)</li> <li>• Chiosso, Elaine (0023-3) (0023-7) (0023-9)</li> <li>• Cross, Wayne (0016-1)</li> <li>• Cullington, Liz (0002-83) (0022-1) (0022-15)</li> <li>• Dukes, Patty (0022-1) (0022-15)</li> <li>• Eads, Don (0022-1) (0022-15)</li> <li>• Ellison, Margie (0022-1) (0022-15)</li> <li>• Jacobs, Barry (0031-12)</li> <li>• King, Ed (0022-1) (0022-15)</li> <li>• Meyer, Nick (0022-1) (0022-15)</li> <li>• Pactin, Judy (0024-1)</li> <li>• Royal, Lil (0022-1) (0022-15)</li> <li>• Schwankl, Audrey (0002-84) (0002-93) (0022-1) (0022-15)</li> <li>• Schwankl, Jimmy (0022-1) (0022-15)</li> <li>• Warren, Jim (0001-43)</li> </ul>
Opposition - Licensing Process	<ul style="list-style-type: none"> <li>• Cullington, Liz (0028-39)</li> <li>• McDowell, Mary (0001-131)</li> <li>• Womble, Wallace and Pansy (0025-1)</li> </ul>
Opposition - Nuclear Power	<ul style="list-style-type: none"> <li>• Blackburn, Jeanne (0004-1)</li> <li>• Bonitz, John (0022-13) (0022-18)</li> <li>• Cullington, Liz (0022-13) (0022-18)</li> <li>• Dukes, Patty (0022-13) (0022-18)</li> <li>• Eads, Don (0022-13) (0022-18)</li> <li>• Ellison, Margie (0022-13) (0022-18)</li> <li>• King, Ed (0022-13) (0022-18)</li> <li>• Meyer, Nick (0022-13) (0022-18)</li> <li>• Royal, Lil (0022-13) (0022-18)</li> <li>• Schwankl, Audrey (0002-85) (0022-13) (0022-18)</li> <li>• Schwankl, Jimmy (0022-13) (0022-18)</li> </ul>
Opposition - Existing Plant	<ul style="list-style-type: none"> <li>• Chiosso, Elaine (0023-2)</li> <li>• Schwankl, Audrey (0002-88)</li> <li>• Turk, Lawrence "Butch" (0008-1)</li> </ul>
Outside Scope - Emergency Preparedness	<ul style="list-style-type: none"> <li>• Cullington, Liz (0002-81) (0028-236)</li> <li>• DeBenedetto, Vinnie (0001-1) (0001-7)</li> <li>• McDowell, Mary (0001-129)</li> <li>• Radford, Bruce (0020-2)</li> <li>• Runkle, John D. (0001-87) (0005-2) (0005-3) (0005-5)</li> <li>• Sears, Dick (0019-10)</li> <li>• Smelcer, Donald (0017-3)</li> </ul>

**Table 3. (contd)**

<b>Comment Category</b>	<b>Commenter (Comment ID)</b>
Outside Scope - Miscellaneous	<ul style="list-style-type: none"><li>• Cullington, Liz (0028-152)</li><li>• Holleman, Gerald (0001-95)</li><li>• Keto, Evan (0010-37)</li></ul>
Outside Scope - NRC Oversight	<ul style="list-style-type: none"><li>• Bonitz, John (0022-16)</li><li>• Chiosso, Elaine (0023-11)</li><li>• Cullington, Liz (0022-16) (0028-200)</li><li>• Dukes, Patty (0022-16)</li><li>• Eads, Don (0022-16)</li><li>• Ellison, Margie (0022-16)</li><li>• Gilbert, Bob (0001-113) (0001-115)</li><li>• Jacobs, Barry (0031-8)</li><li>• Keto, Evan (0010-36)</li><li>• King, Ed (0022-16)</li><li>• McDowell, Mary (0001-130) (0001-134)</li><li>• Meyer, Nick (0022-16)</li><li>• Porter, Barry (0002-101)</li><li>• Royal, Lil (0022-16)</li><li>• Schwankl, Audrey (0022-16)</li><li>• Schwankl, Jimmy (0022-16)</li><li>• Smith, Jane (0001-66)</li><li>• Warren, Jim (0001-51)</li></ul>
Outside Scope - Safety	<ul style="list-style-type: none"><li>• Chiosso, Elaine (0023-1)</li><li>• Cullington, Liz (0002-62) (0002-70) (0002-82) (0028-34) (0028-38) (0028-141) (0028-163)</li><li>• DeBenedetto, Vinnie (0001-4)</li><li>• Gilbert, Bob (0001-112) (0001-114)</li><li>• Jacobs, Barry (0031-2) (0031-5) (0031-6)</li><li>• Keto, Evan (0010-24)</li><li>• Modeen, Jessica (0011-6)</li><li>• Runkle, John D. (0001-88) (0005-6) (0005-7) (0005-8)</li><li>• Schwankl, Audrey (0002-87)</li><li>• Turk, Lawrence "Butch" (0008-8)</li></ul>
Outside Scope-Security and Terrorism	<ul style="list-style-type: none"><li>• Cullington, Liz (0028-49)</li><li>• Jacobs, Barry (0031-3) (0031-4)</li><li>• McDowell, Mary (0001-133)</li><li>• Runkle, John D. (0001-89) (0005-9) (0005-10) (0005-11)</li><li>• Turk, Lawrence "Butch" (0008-5)</li><li>• Warren, Jim (0001-46)</li></ul>

## Harris Combined Construction and Operating License Public Scoping Comments and Responses

The comments and suggestions received as part of the scoping process are summarized and discussed below. Parenthetical numbers after each comment refer to the Comment Identification (ID) number (document number-comment number) and the commenter name. Comments are grouped by category.

The draft EIS will take into account the relevant issues raised during the scoping process, and it will be made available for public comment.

The comment period for the draft EIS will offer the next opportunity for the applicant; interested Federal, Tribal, 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 EIS will be considered in the preparation of the final EIS. The final EIS, along with the staff's Safety Evaluation Report, will be considered in the NRC's decision on PEC's COL application for the Harris site.

### 1. Comments Concerning Process – COL

**Comment:** [Y]our job in reviewing the environmental matters, I think has got to be a fair and independent analysis. There has been criticisms of the NRC staff over the last six months about sort of baldly taking what utilities have put into their operating license applications and saying that's our analysis. You can't do that. That's not going to be good enough. You have to do your own independent analysis. (0001-84 [Runkle, John D.])

**Comment:** I didn't learn about this meeting until May 29th, so needless to say, I have not had time to both download and read all 1636 pages of Progress Energy's Environmental Report, let alone the rest of the license application. However, there has been no local publicity about this meeting that I'm aware of, and I did try searching for that on line. And I believe people would need one or two months to digest this amount of information. So you can expect to get only general comments. And it appears that most of them are coming from people recruited by Progress Energy to speak in favor of more nuclear power. (0002-58 [Cullington, Liz])

**Comment:** A full and impartial review by the NRC staff cannot rely on actions taken by the NC Utilities Commission on the annual integrated resource plan (IRP) submitted by Progress Energy. For example, Progress Energy did not show in the most recent IRP in NCUC Docket E-100, Sub 114, how much of its demand growth and capacity needs were to be met by energy efficiency or renewable energy sources. (0005-24 [Runkle, John D.])

**Comment:** Let me say that I am neither for nor against nuclear power or the proposed action. I am for carefully reasoned decisions, clean energy, economic growth, and employment. I am against decisions made in haste or with incorrect information, waste, market failures, and unemployment. Below are what I feel are important points to consider when deciding whether to approve the proposed facilities. (0010-1 [Keto, Evan])

**Comment:** When evaluating the proposed action and alternatives, please begin your evaluation by analyzing the impacts of demonstration or commercial projects which have already been constructed, and use these to illustrate what typical impacts might be. (0010-13 [Keto, Evan])

**Comment:** Who do I need to talk to regarding the Harris application webpage?.....IT IS VERY CONFUSING!! I can't even find where you make a Scoping Comment! The Public Meeting that was held this week wasn't even on the schedule. (0012-1 [Cowles, June])

**Comment:** We have linked your website to the Town of Apex website for Public Information. Can you revise the webpage so the PUBLIC can actually tell what is going on at this point in time (The scoping project phase). A simple description of what the Scoping Project does and how to make a comment and the DEADLINE would be MOST helpful. Right on the First Page....\*\*\*This Project is NOW in the Environmental Scoping Process\*\*\* Explain what the Scoping Process Includes, then add the How to make a comment and then the Comment Deadline. (0012-2 [Cowles, June])

**Comment:** Neither of these additional water sources has been approved or permitted, and may never be. Therefore it appears that it is premature for the license review to proceed, until these water supply issues are resolved, and state water quality permits have been issued, or not. In addition, preparation of a draft Environmental Impact Statement cannot proceed, because you cannot predict environmental impacts from processes that are unknown. (0022-6 [Bonitz, John] [Cullington, Liz] [Dukes, Patty] [Eads, Don] [Ellison, Margie] [King, Ed] [Meyer, Nick] [Royal, Lil] [Schwankl, Audrey] [Schwankl, Jimmy])

**Comment:** Fourthly, we also contend that the application is also incomplete because of the major deficiencies of the Environmental Report submitted by Progress Energy. There are numerous inconsistencies and omissions, between sections and chapters, between sections and summaries, factual errors, and inconsistent findings, impacts or activities that appear in one section but not in another, appear in text but not in tables, and generally make NRC review impossible. (0022-8 [Bonitz, John] [Cullington, Liz] [Dukes, Patty] [Eads, Don] [Ellison, Margie] [King, Ed] [Meyer, Nick] [Royal, Lil] [Schwankl, Audrey] [Schwankl, Jimmy])

**Comment:** Future impacts should be based on future, not past resource availability, conditions and impacts. It is not appropriate to reference a 14 year old GEIS for license renewals, because that document (out of date) was to cover future operations of only 20 years. However new reactors undergoing COLA review and EIS scoping now would operate up to 70 years from now (0028-184 [Cullington, Liz])

**Response:** *The licensing process for COL applications is specified in Title 10 CFR Part 52. The environmental review process associated with new reactor licensing includes a detailed review of an applicant's COL application to determine the environmental effects of building and operating the nuclear power facility for up to 40 years. After review of the application against the regulations and regulatory guidance, a mandatory hearing or optional contested hearing will be held where the decision will be made about whether or not it is appropriate to grant the license. NRC approval of an application for a COL is not a foregone conclusion. Safety issues as well as environmental issues will be evaluated before a decision is reached on an application.*

**Comment:** We are aware that the Nuclear Regulatory Commission (NRC) is the lead federal agency on an EIS for this proposal. In an effort to be as responsive to the applicant as possible, the Corps has offered to be cooperating agency with the NRC to reduce the potential of requiring a supplemental EIS at the end of the process. Early conversations with NRC staff indicate that they may not be able to expand their EIS to incorporate Corp regulatory requirements. Therefore, the possibility of a supplemental EIS remains. (0033-2 [Manuele, Jean B.]

**Response:** *The NRC received official notice of the U.S. Army Corps of Engineers' interest in becoming a cooperating agency for the Shearon Harris COL EIS. The NRC has agreed by letter dated September 19, 2008 [ADAMS Accession Number ML0825206649] to invite the U.S. Corps of Engineers to serve as a cooperating agency in the preparation of the EIS for this licensing action.*

## **2. Comments Concerning Process – NEPA**

**Comment:** I do trust that any impacts that will be addressed during this scoping process will be included in the impact statements. (0001-32 [Griffin, Eric])

**Comment:** [Y]ou have to look at everything. You just can't take what Progress Energy says in their environmental report. You can't take what other agencies say as being what is actually going on. So that independent analysis, we are going to hold you to that because that's what the NEPA requirements say. You have some expertise in-house on the design base accidents, the severe accidents. Those are really the ways that the radioactivity gets out into the population and causes a whole lot of things. (0001-85 [Runkle, John D.]

**Comment:** The EIS review should be both fair and independent; the NRC staff may not blindly follow Progress Energy's analysis. Under NEPA, the NRC is the lead agency and cannot rely on other agencies to make decisions for it. (0005-1 [Runkle, John D.]

**Comment:** the NRC should actively seek out the energy experts at the federal, state, and local levels to ensure that the discussion is correct and reflects the most recent information. (0010-15 [Keto, Evan])

**Comment:** [I] formally ask that the NRC consult with and actively obtain the comments of the following federal agencies with jurisdiction by special expertise before producing a Draft EIS for the proposed action: 1) The Department of Energy's National Renewable Energy Laboratory, regarding the impacts of renewable energy development and conservation in North Carolina, and how the proposed action may affect this development. 2) The United States Marine Corps, regarding the environmental impacts of ocean wave power at their demonstration project at the USMC base located on the island of Oahu. 3) The Federal Energy Regulatory Commission, regarding the impacts of hydropower including hydrokinetic power. 4) The Army Corps of Engineers, regarding the impacts of wind power, particularly offshore wind. 5) The U.S. Department of Agriculture regarding the impacts of energy generated on farms, whether by biogas, biofuels, wind, or solar energy. 6) The U.S. Forest Service, including the Croatan National Forest in Eastern North Carolina, regarding the impacts of using low-value biomass from forestry operations for energy. (0010-35 [Keto, Evan])



**Comment:** Preparation of a draft Environmental Impact Statement cannot proceed, because you cannot predict environmental impacts from processes that are unknown. (0023-8 [Chiosso, Elaine])

**Response:** *These comments relate to how the NRC implements the requirements set forth within NEPA. They provide no specific information related to the current licensing action and will not be evaluated in the EIS.*

### **3. Comments Concerning Site Layout and Design**

**Comment:** Firstly, because the referenced design, the AP1000, is undergoing significant revision. In this respect, not only is the license application incomplete, but so is the "Environmental Report" submitted by Progress Energy, since a significant section depends on the plant's design, and safety systems: Chapter 6 "Environmental Impacts of Postulated Accidents Involving Radioactive Materials." (0022-2 [Bonitz, John] [Cullington, Liz] [Dukes, Patty] [Eads, Don] [Ellison, Margie] [King, Ed] [Meyer, Nick] [Royal, Lil] [Schwankl, Audrey] [Schwankl, Jimmy])

**Comment:** The referenced design, the AP1000, is undergoing significant revision. In this respect, not only is the license application incomplete, but so is the "Environmental Report" submitted by Progress Energy, since a significant section depends on the plant's design, and safety systems: Chapter 6 "Environmental Impacts of Postulated Accidents Involving Radioactive Materials." (0023-4 [Chiosso, Elaine])

**Response:** *NRC regulations do not require that applicants refer to a certified design in a COL application. Postulated accidents, including design-bases and severe accidents, will be addressed in the EIS.*

**Comment:** [T]he new Westinghouse AP1000 reactor has no full scale operating prototype anywhere in the world. In fact, the design is still going through revisions that one NRC Commissioner has called substantial in a public speech. (0002-80 [Cullington, Liz])

**Comment:** PEC says that operation of a new unit at the site should have essentially the same environmental impacts -- omits to say, times three, and with no operational history for the AP1000, no assurance that it wouldn't be more than triple for some effects, such as radioactive emissions to air and water, more heat dissipated to air, greater thermal discharges.... (0028-123 [Cullington, Liz])

**Comment:** (p. 9-98) Section 9.4 Alternative Plant and Transmission Systems. PE calls the AP1000 a certified nuclear plant design but of course this is no longer really true, since it is going through significant revisions. (0028-124 [Cullington, Liz])

**Comment:** (p. 10-43) 10.3 Relationship between short term uses and long-term productivity of the human environment. For the analysis of long-term impacts, it was assumed that the Harris reservoir and all appurtenant infrastructure and facilities will be maintained in the operating conditions set forth for the proposed Shearon Harris Nuclear Power Plant Units 2 and 3 (HAR). However, we don't yet know what operating conditions PEC is actually proposing since water supply issues are totally up in the air, and the

reactor design is undergoing revisions, so no-one knows for sure what the operating requirements will be. (0028-195 [Cullington, Liz])

**Comment:** Progress Energy has not made it clear whether the "net consumptive use" (evaporation) figure given of 28,122 gallons a minute (gpm) includes cooling needs for the fuel pools, especially since they apparently plan to use dense packing of fuel. (0028-45 [Cullington, Liz])

**Comment:** There seems little point in poring over the safety analyses and SAMDAs for this project when the AP1000 design is incomplete and under significant revision. (0028-48 [Cullington, Liz])

**Comment:** WHEREAS, the US Nuclear Regulatory Commission has set a deadline of August 4, 2008 for submitting objections to the issuance of a permit for the construction of two new reactors at the Shearon Harris plant, even though the Westinghouse Model AP4100 reactor technology proposed for use is not expected to be designed, reviewed and permitted by the NRC before 2011. (0031-10 [Jacobs, Barry])

**Response:** *NRC regulations do not require that applicants refer to a certified design in a COL application. This comment is out of scope and will not be addressed further.*

#### **4. Comments Concerning Land Use – Site and Vicinity**

**Comment:** There are four reasons why we believe that Harris is an ideal site...We have the transmission capability already on site. Land is an abundant. (0001-23 [Pinnix-Ragland, Hilda])

**Comment:** There are four reasons why we believe that Harris is an ideal site...we will actually have another park. (0001-24 [Pinnix-Ragland, Hilda])

**Comment:** The second key reason for Harris is the transmission capability. We already have it right here. We have the transmission capacity right here on site. (0002-31 [Pinnix-Ragland, Hilda])

**Comment:** We have an abundance of land. So we have no problems with securing land or buying that property. And finally, it is located, the Harris Plant, it is located adjacent to North Carolina's growing population. The Triangle and the Charlotte area are growing more than any other area. So we are right here where the customer base is. (0002-32 [Pinnix-Ragland, Hilda])

**Response:** *These comments provide general information in support of additional development of the Harris site. They do not provide any specific information relating to the environmental effects of the proposed action and will not be evaluated in the EIS.*

**Comment:** This new level [raising Harris lake] will undoubtedly cause many roads, bridges, and Harris Park to essentially be under water. ... this impact[s]...an amenity for county citizens, the amenity being Harris Park itself. Our citizens need to be assured that not only will adequate roads be built, but also relocation of the Harris Park, so the tax payers could enjoy much needed park land. (0001-8 [DeBenedetto, Vinnie])

**Comment:** [T]he construction of the two additional reactors and the raising of Harris Lake would have secondary impacts to the Town of Holly Springs, and the Town's and the State of North Carolina's responses to these impacts should be considered as affects on the socioeconomic vitality of the community; and secondary impacts would include the need to widen and resurface roads to provide adequate evacuation. (0019-3 [Sears, Dick])

**Comment:** [I]f Harris Lake is to be raised to 240 feet, two primary evacuation routes will not be accessible because the existing bridges at New Hill Road and Friendship Road will be flooded over and rendered inaccessible, posing both an environmental and a public safety concern. (0019-4 [Sears, Dick])

**Comment:** [I]f Harris Lake is to be raised to 240 feet, Harris Lake Park operated by Wake County will be flooded and eliminated for the county's park system if not replaced. (0019-5 [Sears, Dick])

**Comment:** BE IT FURTHER RESOLVED that the Holly Springs Town Council desires that the NRC address the environmental, socioeconomic and public safety concerns and findings of the Town by requiring the applicant to...provide assurances that Harris Lake Park will be relocated and replaced in cooperation with Town of Holly Springs and/or Wake County Parks and Recreation Departments. (0019-9 [Sears, Dick])

**Comment:** The impacts from a higher level lake are listed as short-term, but they are very long term. (p.5-5) and are also called SMALL! Given the discharges of heavy metals into the lake from 3 reactors it is unlikely that the lake could be drained and returned to its original uses. (0028-1 [Cullington, Liz])

**Comment:** 9.3.2.2.1.1. Land Use. Impact on land use is not properly evaluated. It is not only the footprint of 2 new nuclear plants on land that is currently owned by PEC and so on, but the flooding of an additional 4,055 acres of land surrounding the current main (lower) reservoir. In addition there are numerous other land use impacts: new transmission lines, expanded access roads, relocated transmission towers, relocated roads, relocated recreational facilities, etc. etc. (0028-106 [Cullington, Liz])

**Comment:** 5.1.1.2.2 Recreation areas. PEC doesn't specifically say it will replace boat ramp(s) As for Harris Lake County Park the expansion of the lake would flood many constructed facilities, and its not clear if PEC is going to pay to reconstruct new ones, but the overall acreage would definitely be reduced to something like half its current acreage. This is a significant impact on a park whose main attraction is not its lavatories, but its miles of walking and running trails. (0028-11 [Cullington, Liz])

**Comment:** There is also no stated mitigation for reduction of game lands, which is both an ecological and a recreation impact. But hey, says PEC, more area of water for water fun! (How much fun is a lake you can't swim in, or even wade?) The fact is that double the water acreage at Harris is unlikely to increase the number of visitors: there are no public facilities near the boat ramps or anywhere else, except at Harris Lake County Park, and those are located for the use of land based visitors. Jordan Lake has swimming beaches, campgrounds, trails, picnic shelters and boat ramps (and park personnel), and therefore can be used by visitors from elsewhere in the state or country. Harris Lake is primary used for boating by very local visitors. (0028-12 [Cullington, Liz])

**Comment:** "Short term changes in land use... will be associated primarily with impacts resulting from the increase in the water level of Harris Reservoir... would be minor and would include recreational areas, roads, HAR facilities, municipal facilities, and ecological issues." These are not short-term changes. Flooding land is a long term impact, as are the construction of roads, buildings, and so on, and so is the destruction of habitat. (0028-128 [Cullington, Liz])

**Comment:** (p. 5-12) 5.1.1.2.2.3 Shearon Harris Game Lands. 13,227 total acres, 2022 acres of which would be flooded, which is actually 15% not 14% of total. However, its not specifically pointed out here that this (as cited earlier) represents a 31% loss of the forested habitat in those game lands. A pretty large loss which is being bundled into yet another "SMALL" impact (0028-13 [Cullington, Liz])

**Comment:** Flooding would affect county roads, NC game lands, transmission lines, boat ramps, emergency siren towers, Harris Lake County Park, the Wake County sheriff's firing range and several PEC facilities. Boat ramp and parking to be relocated. PEC is committed to relocating the Harris County Park services affected by the increased level of the reservoir. (So overall acreage would decrease. No mention of compensatory added land.) Affected roads could require the purchase of additional ROW (by whom, who pays? More hidden subsidies?) (0028-132 [Cullington, Liz])

**Comment:** Section 10.1.1 Construction impacts Land Use: There is no mention of flooding 4,500 plus acres! (0028-142 [Cullington, Liz])

**Comment:** (p. 10-16) There is a "mitigation measure" listed that is not clearly tied to a specific activity or adverse impact which states Replace the affected infrastructure features with similar infrastructure in non-affected areas nearby with the result of "no net loss in the resource area or associated function value." (emphasis added). This is vague for a reason, because PE C plans to only move, raise, rebuild, or relocate vital infrastructure such as roadways, transmission lines, some of its own facilities (not specified), and apparently some of the facilities at Harris Lake Park, possibly such things as toilets, water fountains, playground, parking areas, and the rerouting of paved trails. However nowhere in the ER is there any offer to expand the boundaries of the park to replace the land that will be flooded, so in this case there will be net loss in the resource area and its functional value. (0028-154 [Cullington, Liz])

**Comment:** There is no mention under either construction or operational impacts on Land Use of the loss of close to one third of forested NC Game Lands, and no mention anywhere of any "mitigation measures" meaningful or otherwise. (0028-155 [Cullington, Liz])

**Comment:** (Page 10-17) After the aforesaid facilities have been relocated Long term land use impacts are expected to be insignificant. Well this is just typing for typing's sake. The current Energy and Environmental Center would apparently end up below the level of the lake or in an new a flood plain since PEC says that it would need to be surrounded by a new flood dike. This is not mentioned as an additional cost. (0028-158 [Cullington, Liz])

**Comment:** In addition, regarding Harris Lake County Park (again) PEC tries to say there will be no land use impact from cutting down forest to build new facilities, parking, roads and all the rest of it, claiming that this would be temporary until the permanent

locations can be established. No it wouldn't, pavement, roof and other man-made stuff is going to replace forest, for the entirety of the operating life of the reactors and beyond. (0028-160 [Cullington, Liz])

**Comment:** PE mentions the large areas of forested habitat existing in proximity to the site (which site, the ER has many confusing site definitions). The fact is that the lake raising project would destroy almost one third of the forested NC game lands adjacent to the lake(s). There is no habitat, forested or otherwise, nearby, owned by PE or others, which is permanently dedicated wildlife habitat, and much of it lacks access to the lake (and thus year round water supply) and is commercial timber land, or future housing developments. (0028-175 [Cullington, Liz])

**Comment:** (p. 10-45) PEC states that The perimeter of Harris Reservoir and the surrounding area are currently placed in the timber production use category. A recent land use coverage analysis indicates more than 70 percent of the land contained in the watershed is forested (Reference 10.3-001). However, it seems unlikely that NC Game Lands, Harris Lake Park and some of the other area in the entire watershed is currently being logged. Elsewhere PEC identifies thousands of acres to be inundated as NC Game Lands. In addition, PE has confusing terminology regarding what the public calls Harris Lake since it currently consists of two conjoined impoundments at two elevations. Nowhere does PE mention the impact on the recreational use of Harris Lake when all this logging and bulldozing is going on. It is going to be noisy and upsetting and the area being cleared will have to be off limits to the public. PEC admits here that some of the wetlands to be flooded predated the creation of the lake for Shearon Harris. Under the definitions for impact being used, land use impacts will not be small but LARGE. (0028-197 [Cullington, Liz])

**Comment:** [W]hat other buildings could be subject to flooding as a result of increasing the level of the lake? (i.e. other property owners). (0028-2 [Cullington, Liz])

**Comment:** 10.3.1.10.5 Recreation. PEC claims that 279 acres of recreation facilities at Harris Lake County Park and four boat ramps will be displaced by the rise in the reservoir's water level. Is the total acreage of Harris Lake County Park or just those portions considered recreation facilities? It's the totality of the acreage at the park that counts because there are numerous trails and in addition the pine woods are open enough to walk in. PEC mentions but does not include in its land use impacts (additional acres affected by new/relocated buildings) or its costs, those PEC facilities [that] will need to be relocated: storage and maintenance facilities, picnic areas, a restroom, a playground; and a ball field. If these are facilities at Harris Lake County Park, this includes some facilities not itemized in the relevant portion(s) of the ER, and omits parking lot(s) mentioned elsewhere. (0028-211 [Cullington, Liz])

**Comment:** 10.3.2.4 Water. (p. 10-55) Why is the small land use impact of flooding 4055 acres, which ought to be large impact, described in the water section rather than a land use section? (0028-217 [Cullington, Liz])

**Comment:** 10.3.2.9.5 Recreation. PEC can't seem to make up its mind whether plant employees will be people who already live here or people who move here. It depends on the section and whether new or current looks better. So for sales taxes (above) it'll be new workers paying more sales taxes, but here, impact on recreational needs, its all current residents, so no new or additional demands would be made. Whereas you would get the impression from elsewhere in this ER that PEC is going to pay to physically

rebuild recreational facilities that would be flooded (boat ramps and the many flooded facilities of Harris Lake County Park) it also appears that they may not. "PEC is committed to mitigating these losses by re-creating or designating recreational areas at higher elevations." (0028-231 [Cullington, Liz])

**Comment:** PEC wants to claim that the increased area of the lake would so completely offset the loss of a large amount of Harris Lake County Park to the point that this would be a moderate long-term beneficial impact. In fact this would be a moderate long term negative impact. Boating and fishing are the only water-related activities allowed at the lake and with no beach areas and no swimming (or camping) allowed, it is the trails for walking and running, the woods, and the picnic areas of the park that serve the vast majority of local users. You have to own your own boat and trailer, there are no boat rentals, so doubling the size of the lake which is usually close to empty of boats, does not really double the fun as PEC would like to claim. (0028-232 [Cullington, Liz])

**Comment:** This is cited as solely an impact on the current transportation system, but these new roads should be added to the ever rising tally of land use impacts, area permanently lost to other more beneficial uses. Even additional highway modifications may be required (at taxpayer expense) with the loss of more acreage since DOT takes a gigantic swath just to add a turn lane. For example a plant access road 10,000 ft X 32 ft. and miscellaneous plant roads totaling 8700 ft X 24 ft. = 320,000 sq. ft + 208,800 sq. ft = 528,800 sq. ft more than 12 acres. (0028-8 [Cullington, Liz])

**Comment:** WHEREAS, Progress Energy has stated the move would require raising the level of Harris Lake by 20 feet; and WHEREAS, if the lake is raised, Progress Energy will work with the County to move park facilities to higher ground on the same property; and WHEREAS, Harris Lake County Park is the County's largest park; WHEREAS, Harris Lake County Park would remain the County's largest park. (0030-3 [Bryan, Joe])

**Response:** *Impacts of raising the elevation of the Harris Lake operating pool on affected public infrastructure including roads, bridges, and recreational facilities such as parks, boat ramps, and public lands will be analyzed in the EIS. Actions expected to mitigate significant impacts, including commitments by Progress Energy to perform mitigation, will be described.*

**Comment:** Page 10-15 Table 10.1-2 Sheet 1 Operation related unavoidable impacts Land Use: The flooding of 4,055 acres (which is not specified here) is an impact of both construction and operation, and has no suggested mitigation measures, and is not merely a "change in land use," nor can it be considered a "small" impact. In addition, the potential for radioactive sediment (especially heavy metals) from three reactors and their associated discharges including human waste building up in the lake means this land would be essentially lost to productive use. Even after decommissioning the lake can likely not be drained and put back into use, and draining or dredging would just send more contaminants downstream. So this a very long term loss of land, plus a long term negative in terms of the resource as a water body. (0028-153 [Cullington, Liz])

**Comment:** (p.10-3)1 Land use change from increased water level. The process of lowering the lake and restoring the land around Harris Lake to the original forested habitat would be impractical to implement due to conditions on the perimeter of the lake and vegetation recovery would take decades. Not clear what they are talking about when they refer to conditions on the perimeter of the lake but draining the lake and returning it

to agriculture etc. will not be possible given the high probability of contamination in the lake bed. (0028-174 [Cullington, Liz])

**Comment:** Table 10.2.1 (page 10-38) Land Use: the entire lake is an irreversible environmental commitment (4055 acres on top of current acreage of lake). a) Lake sediment contaminated with metals could mean the land could be unusable if lake is drained; Harris Lake currently receives human wastewater discharge from the plant and Holly Springs, could possibly receive from a third WWTP (Western Wake Partners) serving several towns; Harris Lake also receives various types of treated process water from the plant; 180 operational years (3 reactors) is likely to make the lake bed unsuitable for agriculture -- literally forever in human terms. b) The discharge of these wastes and radioactivity from three reactors could make Harris Lake unusable for fishing, so that both recreational and aquaculture offsets from flooding cannot be guaranteed in future, during operation or after decommissioning of three reactors. c) The risk of a nuclear accident is increased rather than decreased by adding two new reactors; this increases the possibility of discharge to the Lake of even greater levels of chemicals, metals and radioactivity, and other contaminants. No matter how low the risk of accident it is not zero, and so there is no cast-iron guarantee that the land to be inundated can be retrieved or reversed. Thus this finding should be that there is an irretrievable and irreversible loss of an additional 4055 acres. (In addition, adding two new reactors increases the likelihood that the original area of the Lake will be an irreversible land use loss.) (0028-189 [Cullington, Liz])

**Comment:** Section 10.3.1 OPERATIONS PREEMPTIONS AND PRODUCTIVITY (p. 10-53) The HAR site has been developed as a location for major energy generation facilities. This is a ridiculous statement when PEC defines the HAR site as including all the land around the lake, the lake, the pipeline route (which crosses private land) and down to the dam on the Cape Fear River. (0028-215 [Cullington, Liz])

**Comment:** 10.3.3 SUMMARY OF RELATIONSHIP BETWEEN SHORT-TERM USES AND LONG-TERM PRODUCTIVITY Once again PE C fails to consider the increased Harris Lake area as a potential long-term loss. As stated above, it is unlikely that the Lake could become a future drinking water source, nor that it could be drained and used for agriculture as there would be heavy metal contamination of the silt, from discharges from three reactors, and past discharges from a Holly Springs WWTP and (a PEC-) proposed discharge from a larger Western Wake WWTP. (0028-238 [Cullington, Liz])

**Comment:** Land use: PEC claims that construction at the HAR site is not expected to have long term impacts on land use, although the ER as a whole demonstrates that many more acres than the 4055 would be permanently rendered useless. PEC continues: "Siting of a new unit at the HAR site would not require significant land use changes for construction since the majority of the site has already been disturbed." However, the majority of the new nuclear plants footprints were merely been cleared of trees before late 2007, and the rest of the affected thousands of acres is what it is, gamelands, wildlife habitat, forest, and some of it, private land (that affected by road relocations, widening of ROWs or new transmission routes, etc. etc. (0028-254 [Cullington, Liz])

**Comment:** (p. 5-21) PEC talks about those past droughts, with at least one recorded low cited, of 69, 569 gpm. In addition, as PE notes, Jordan Lake has to be managed to maintain a certain level of flow at Lillington, so the more water that PEC pumps out of

the Cape Fear River to maintain Harris Reservoir (and/or evaporates through new cooling towers), the more water would have to be released from Jordan Lake. This would have a LARGE impact on a local recreation area which is visited by significantly more people than is Harris Lake, with commensurate localized economic impacts. (0028-26 [Cullington, Liz])

**Response:** *The EIS will evaluate impacts on Harris Lake specifically including clearing the lake shore, increasing the surface area, and the associated operations impacts on lake recreation, local land uses, and visual aesthetics in the EIS.*

**Comment:** 10.1.2 Operational impacts. Increase in impervious surfaces, and increased operating level of Harris Reservoir. "100 acres of land are committed for fuel cycle activities" see Table 10.2.2 (See note (b) to table, this is apparently for a 100 acre-site reprocessing plant.) This is a pretty poor summary of the many land use changes itemized elsewhere in the ER in piecemeal fashion. (0028-145 [Cullington, Liz])

**Comment:** (p. 5-15) 5.1.2 Transmission corridors and offsite areas New switchyard for HAR 3: is this included in the land use "footprint" of the two reactors? (0028-15 [Cullington, Liz])

**Comment:** 10.2.1.1 Land Use: The proposed location of the site [sic] is currently in partial use by HNP. This is contradicted by photographs submitted with seismic analysis as NEI workshop on Harris site status, 3/1/2007. This shows (as do other maps/figures in the ER) that HAR-2 site is open cleared area with no activity, and HAR-3 site is more recently cleared, with no plant activity. It's only current use is as part of the exclusion zone. In spite of statements to the contrary elsewhere in the ER, PEC says here there would be NO additional irreversible commitments of land, but in the comparison of alternatives, PEC says that the two new reactors would require 192 acres not currently paved or roofed over. This of course is just the footprint of the reactor buildings. As stated elsewhere in my comments: Land acreage permanently lost to the two new reactors would have to include all new road area, expanded lake acreage, and all other associated changes that would remove land from being able to be productive in future. (0028-171 [Cullington, Liz])

**Comment:** In this summary PEC also fails to mention all the other acres that would be lost to other uses; (a) The footprint of two new reactors: grading, compacting and foundations render this land unsuitable for forest or agriculture afterwards, and future likely higher prices for energy make it unlikely that the plants foundations would be removed. (In the case of a certain types of accidents, plant might have to be entombed.) Future energy prices, economic conditions might also lead to entombment rather than decommissioning. All in all, no guarantee this land can be retrieved. (b) The acreage that would go under new roads (expansions, re-routings) is also going to be lost to useful use, because of removal of topsoil, and compaction, as well as paving. (c) The acreage required for new transmission line ROWs or ROW expansion is also going to be lost because of herbicide spraying along the ROW. This would render the land unsuitable for agriculture for many years. (0028-190 [Cullington, Liz])

**Comment:** 10.3.1.1 Land use. The proposed construction site is composed of areas that are impervious to water infiltration (e.g. parking lots, laydown area, crushed stone, and some tree-covered areas)." However, a) gravel parking lots or storage areas are permeable not impervious surfaces, as well as the tree-covered areas." b) if parking lots



etc. were to become part of the footprint of HAR 2 or HAR 3, then presumably PEC would have to create new ones, this means that there is an additional affected acreage that PE is not counting in relation to its land use calculations when considering alternatives. c) the photo submitted to NRC as part of Progress Energy Harris Site Status: NuStart- NEI Seismic Workshop, March 1, 2007, page 4, shows that the sites for both HAR 2 and HAR 3 are cleared vegetated area, and neither paved nor graveled. The sites shown for HAR 2 and HAR 3 with this ER, on Figure 4.00-03 also show vegetated and not industrialized or paved areas. If they are paved over now one has to question what geological features have been thus obscured, particularly in a geologic region (The Durham Triassic Basin) where faults and volcanic dikes can be found on the surface, but less easily under large paved areas. (0028-196 [Cullington, Liz])

**Response:** *The land use impacts of the proposed action including expected permanent and temporary land use changes at the site, in the vicinity, in the region, and in the offsite areas such as affected transmission corridors will be evaluated in the EIS.*

## **5. Comments Concerning Land Use – Transmission Lines**

**Comment:** 9.3.2.2.1.10 Transmission Corridors. PEC estimates that upgrading for two new 1100-MWe reactors would only cost \$ 1 million for the addition of each, but would require three new transmission lines. It seems a little curious that it is estimating \$2-3 billion for transmission line costs for the Levy County Florida site, but only \$1 million at Harris. In fact some current transmission towers and lines have to be relocated because otherwise they'd be flooded. The corridor areas are mostly remote and pass through land that is primarily agricultural and forest land with low population densities. It is anticipated that farmlands that have corridors passing through them will generally continue to be used as farmland. This is deceptive, the expanded ROWs won't be able to be used as farmland. Progress Energy specifically prohibits people from planting within the ROW and sprays herbicides along the ROW, and this could affect nearby cropland, pastureland and ponds and/or groundwater rendering a much wider area useless for agriculture. (0028-119 [Cullington, Liz])

**Comment:** p.9-124) Section 9.4.3 Transmission Systems."The existing HNP is connected to the PEC transmission grid by seven 230 kilovolt (kV) transmission lines.... These seven lines radiating in different directions from the plant connect to strong and diverse parts of the PEC system. Three new transmission lines would be constructed only if the HAR 3 is constructed and were required to distribute generated electricity." (not much point in building it otherwise!) This is inconsistent with statements elsewhere in the ER that new routes would not be needed. (0028-134 [Cullington, Liz])

**Comment:** "A Regional Transmission Organization (RTO) or the owner, both regulated by FERC and the Southeastern Electric Reliability Council (SERC) will bear the ultimate responsibility for the following: defining the nature and extent of system improvements; designing and routing connecting transmission; addressing the impacts of such improvements." Is this a way of saying the impacts of transmission lines doesn't have to be included in the EIS? Nonsense. In addition, this omits the role of the North Carolina Utilities Commission in approving new generation plants and new transmission lines. (0028-135 [Cullington, Liz])

**Comment:** (Page 9-126) Current ROWS to be expanded 100 ft. which would require logging existing forested land along the ROW, and some farmland would be put out of production, with broader impacts on non-purchased ROW land from pesticide spraying which PEC doesn't list as an impact. (0028-136 [Cullington, Liz])

**Comment:** (p. 9-126-127) Offsite power would come to the plant(s) from a new 230-kv line. This presumably would require a new 200 ft ROW, but PE leaves this very vague. This is an additional land use impact of a new nuclear plant that PEC fails to calculate compared to (for instance) distributed solar generation. (0028-137 [Cullington, Liz])

**Comment:** (p. 5-14) Section 5.1.1.2.2.6 Transmission line impacts 89 "structures" will have to be relocated, so there are undeclared new land use impacts (construction and operational) for new ROW that PEC has not included in its land use comparison with other alternatives (Chapter 9) nor in the cost of the plant. (0028-14 [Cullington, Liz])

**Comment:** Transmission line rerouting due to flooding would have more than small land use impacts and mitigating measures such as using existing ROWs simply may not be feasible. It seems curious that if PE is going to cut all the trees before flooding 4,550 acres that they wouldn't remove the old transmission towers, and would instead mark them with buoys. This seems dangerous for boaters, especially as the towers could outlast the buoys. (0028-159 [Cullington, Liz])

**Comment:** PEC says that expanding current ROWs would "limit" how much more land would need to be acquired, but here and elsewhere there is no acreage specified. This means that yet again land use requirements and impacts are understated, as are costs. Yet PEC goes on to say that new transmission lines would require more access roads at some points, e.g. for switching equipment, so there are undeclared roads, land use impacts and costs. (0028-16 [Cullington, Liz])

**Comment:** Elsewhere in the ER, PE states that two new reactors would be served by existing transmission line corridors, with expanded ROWs. However, it would appear that HAR-3 would require three new transmissions lines, to Wake, Fort Bragg, and Erwin. (0028-172 [Cullington, Liz])

**Comment:** PE states disingenuously that farmlands that have [transmission line] corridors passing through them generally continue to be used as farmland. This, however, is not true for the ROW. The company prohibits structures in the ROW, in wooded areas it clears and subsequently sprays pesticides, and the landowner is affected economically by having to give up the right to retain that land for future use. In addition there can be off site effects from pesticide spraying (and possibly by electrical fields). (0028-173 [Cullington, Liz])

**Comment:** (p. 10-49) 10.3.1.8 Transmission lines The ER states in several places that PE will only be widening ROWs of existing transmission lines, but here is one of the places that they mention that Three new transmission lines will connect the new HAR 3 switchyard to the PEC grid. It appears to not be settled whether these lines would use expansion of current line ROWs or new routes. (0028-204 [Cullington, Liz])

**Comment:** 10.3.2.7 Transmission. (p.10-56) PE points out that it would control land use within transmission line ROWs including mechanical clearing, hand cutting, and herbicide application. However PE only cites prohibition of virtually all residential and

industrial uses of the transmission corridors and fails to include agricultural (or timber) uses. The impact of herbicide spraying on adjacent agricultural or residential land could be significant because of run off. Adjacent land could not be used for livestock (or horse) pasture, ponds could be contaminated, and any adjacent crops could be affected by air drift or run off. This is thus a moderate to large impact on that acreage, not small as PE claims. (0028-223 [Cullington, Liz])

**Comment:** PE claims that they would need to construct new roads for access and maintenance, and other landowners would be affected. Having the power company take part of your land for a power line is bad enough, but then if they run a road across the rest of your land to get to it, I'd say you'd be more than affected, you'd be economically and emotionally devastated. (0028-224 [Cullington, Liz])

**Response:** *Environmental impacts associated with any planned new transmission lines will be addressed in the EIS, as will potential impacts associated with upgrades to the existing lines.*

## **6. Comments Concerning Meteorology and Air Quality**

**Comment:** Progress Energy claims that nuclear power involves no emissions and is carbon-neutral or carbon free but they go further to argue, not only to the public, but to scientists at a federal agency like the NRC, that a nuclear power plant would actually lower carbon emissions. None of that is actually true. (0002-59 [Cullington, Liz])

**Comment:** [N]uclear reactors don't operate in isolation, and just because they don't emit carbon dioxide out of the cooling tower does not make them a carbon-free source of power. The uranium fuel has to be mined, then the ore transported halfway around the world, with the U.S. importing about 85 percent of its uranium, a greater percentage than our imports of oil. Then the uranium ore has to be chemically processed, enriched, and manufactured into fuel, a process that not only uses lots of energy, but also releases other processed chemicals into the air that contribute to global warming. (0002-66 [Cullington, Liz])

**Comment:** Pursuing new plants is squandering our chances to slow global warming. Quicker, safer and far more economical ways to cut greenhouse gases are in place. To hold atmospheric carbon dioxide at Year 2000 levels, up to 3,000 new nuclear reactors would be needed by 2050 (Council on Foreign Relations, April 2007), far exceeding global construction and financial capacity. Each plant takes 10-15 years to build. And despite industry claims, nuclear power generates substantial greenhouse emissions during both construction and the energy-intensive fuel cycle. (0008-2 [Turk, Lawrence "Butch"])

**Comment:** I am interested in the total life-cycle impacts of this action, as compared to the other alternatives. It takes a lot of energy to make cement, and a nuclear power plant contains a lot of cement. When it cures, this cement releases carbon dioxide, which one group estimates is responsible for 7-10 percent of carbon dioxide emissions. Additionally, we all know that bulldozers and other heavy construction equipment burns diesel, and the people and materials going to and from the plant require burning gas. Furthermore, water vapor is a greenhouse gas, and methane, a greenhouse gas many times more potent than carbon dioxide, is produced when vegetation decays

underwater, which is a likely if the lake is raised. Therefore, I feel it would be useful for the NRC to quantify exactly the impact of the proposed action and the alternatives on the changing climate, in order to make a clear comparison. (0010-30 [Keto, Evan])

**Comment:** Atmospheric and Meteorological: PEC has failed here to acknowledge the gigantic contribution nuclear power has made to global warming: i)the vast amounts of fossil energy used to mine, and transport uranium ore, to enrich and fabricate and transport the fuel; ii)the fossil energy used to power the nuclear plant so it can produce power; iii)the energy used to construct the plant; with much onsite energy coming from diesel equipment or generators' iv)most importantly, the decades of emphasis by the applicant on meeting increasing demand rather than encouraging wise use of resources in building design and installation of fuel-free appliances like solar hot water; v)until recently, denial of the impacts of coal plants and energy use on global warming; Thus, adding two new reactors will have a devastating effect on our climate, globally, nationally and locally. (0028-193 [Cullington, Liz])

**Comment:** 10.3.2.3 Air. Additional air emissions from increased vehicular traffic from the new operational workforce may contribute to deteriorated air quality in Wake County. This increase in traffic from the new workforce would result in increased ozone emission on roadways and could affect whether attainment status could be maintained in the future. Curiously, this is not mentioned as an impact of construction when there would be ten times the amount of increased traffic to and from the plant. This is a very serious impact in several aspects of the EIS that PEC has failed to include. It is a construction impact on air quality and human health. If Wake County or Chatham County loses its ozone attainment status because of increased emissions then the additional industry that PEC claims would be attracted by the increased supply of electricity is not going to be able to come, and numerous other projects will either not be able to proceed or have to go through significant delays and additional costs. And by the way, regarding traffic impacts and AQ impacts from traffic, there's not much point in PE responding that it will look into running buses to and from the site during construction unless they are going to also build a gigantic complex to house those workers and their families all in one (or two) places. (0028-216 [Cullington, Liz])

**Comment:** Sheet 6 Environmental enhancement benefit is falsely stated as reduction of carbon emissions. New nuclear plants to meet increasing demand will not reduce carbon emissions. These emissions would be increased for at least the first 20 years of operation by the carbon emissions associated with plant manufacture and construction (nationally and internationally) and fuel fabrication. In addition, land clearing prior to flooding will undoubtedly be accompanied by burning of waste wood, brush, stumps etc. (more carbon emissions), more workers driving to the site, more LLRW incineration and a hosts of other impacts. (0028-250 [Cullington, Liz])

**Comment:** (p. 8-35) PEC's resource studies show that carbon emissions (produced by coal and natural gas capacity will continue to rise through 2017. PEC notes, however, that one new nuclear plant will decrease these emissions significantly. (Reference 8.2.001) But a new nuclear plant would not move into carbon neutral status for 10 or 20 years, or possibly ever. And would never reduce carbon emissions per se from other sources. PE's power supply and demand figures show that the nuclear plant would be in addition to and not instead of these other generating sources. (0028-59 [Cullington, Liz])

**Comment:** Regarding climate change and carbon emission concerns in NC. The HAR serves another important need by reducing carbon emissions in the state. The HAR will displace significant amounts of carbon as soon as the plant becomes operational, as compared to a coal-fired generating plant. Once again PEC tries to perpetuate this fallacy with regulators who should know better. (0028-61 [Cullington, Liz])

**Response:** *The NRC staff will evaluate air quality impacts from construction and operation of the station in Chapters 4 and 5, respectively, of the EIS. Carbon emissions from the uranium fuel cycle will be addressed in Chapter 6 of the EIS.*

**Comment:** I am concerned that this scoping take into account the uncertainties of the age we live in, including global warming. (0001-126 [McDowell, Mary])

**Comment:** I would like the scoping to expand, not be closed off by what made sense for the past 30 years, but to consider possibilities and risks that we haven't seen yet but that could happen. Global warming is affecting climate and weather and we can't assume that the weather patterns will be similar to the ones that we've seen in North Carolina in the past. (0001-128 [McDowell, Mary])

**Comment:** The EIS should evaluate the effects of climate change and global warming in terms of extended drought conditions and/or severe weather patterns. (0005-16 [Runkle, John D.]

**Comment:** Severe weather patterns may lead to direct damage to the units and loss of offsite power. (0005-18 [Runkle, John D.]

**Comment:** (p. 9-109) To provide a basis of single hot year and average weather year PE used weather data from 1961 to 1990 and did not include the decade 1990-2000 (let alone 2000-2007). This is totally unacceptable. (0028-126 [Cullington, Liz])

**Comment:** The entire meteorological record, and low flow records, need to be provided up to the present, but an averaging out will not help assure water in the future. The weather of the past is no longer a guide to weather of the future, which is scientifically predicted to produce warmer temperatures, more severe weather events more frequently, more precipitation per event, more prolonged hotter days for longer periods and so on. (0028-24 [Cullington, Liz])

**Comment:** Global warming is predicted to increase the frequency of heavy flooding as well as droughts and greater evaporation from water bodies. (0028-5 [Cullington, Liz])

**Response:** *The NRC staff will examine both onsite and regional meteorological averages and extremes, including severe weather phenomena and air quality conditions, to establish if the data used by the applicant are representative of site conditions and adequate for assessing the effects of station construction and operation on the environment. Results from the meteorological evaluation will be presented in Chapter 2 of the EIS.*

**Comment:** 9.3.2.2.1.2 Air quality. Effect of drift from cooling towers on local crops or plant nurseries can be minimized with the use of drift eliminators on the cooling towers. Are these installed on the existing cooling tower and are they part of the design plans submitted by PEC or to be required by the NRC? (0028-107 [Cullington, Liz])

**Response:** *The NRC staff will examine the impacts of heat dissipation to the atmosphere including visible plume length and frequency from the cooling tower as well as potential increases in fogging, icing, precipitation, humidity, and solid deposition from the plume. Results from the heat dissipation evaluation will be presented in Chapter 5 of the EIS.*

## **7. Comments Concerning Hydrology – Surface Water**

**Comment:** The water situation can easily be resolved in my opinion by expanding the lake, and go ahead and do it. It should have been done to start with. There's going to be 36 million gallons of reused water coming out of two waste water plants, which is much cleaner than what's coming out the creek coming into the lake now. The environmental tragedy will be if you pump water out of the Cape Fear River in that and that is already polluted, and you're going to ruin a pristine lake. This reused water, you will save -- the residents of this area -- between 40 and 50 million dollars if you take this reused water. Because they are going to have to run pipelines all the way to the Cape Fear River. That's about seven eight miles, that is a whole lot of money. So I see no reason that this water can't be reused that comes out of this plant. According to the estimate I got 36 million gallons a day. That would supply, I think at least one reactor before you have to pump any more water. (0001-94 [Holleman, Gerald])

**Comment:** 9.4.2.1 Intake and discharge systems (alternatives). Thermal discharges in NC are subject to limits under 15A NCAC 02B.0211 (3) (j) which limits thermal discharges to 2.8C (5.04 F) above natural water temp. However, if a shallow lake heats up, and water merely 5 degrees F hotter is added, this could still have a significant further effect on aquatic species, and does not prevent the lake from getting too hot to cool the reactor, and spent fuel. (0028-127 [Cullington, Liz])

**Comment:** 9.4.2.2. Water Supply (Makeup Water System). PEC states that the Cape Fear River discharge to reservoir would be well upstream of the existing (and probable new) cooling tower blowdown pipe discharge. This is not what appears in Appendix 2 Figure 4-01, where it appears that the pipeline would discharge significantly downstream of the cooling tower discharges for the current reactor and two proposed reactors. The pipeline discharge point on the figure is also into the (currently lower level) larger reservoir, with the cooling towers appearing to discharge into the smaller (currently higher level) primary lake ("Auxiliary Reservoir"). (0028-131 [Cullington, Liz])

**Comment:** If potable water for Harris plant is from Harris Reservoir, they apparently think it need special filters, not available to all customers downstream. p.9-122 Potable water used throughout the plant typically will be processed through a reverse osmosis (RO) filtration system and, if necessary, will be treated with an antibacterial...such as chlorine. (And what about tritium which cannot be filtered out?) (0028-133 [Cullington, Liz])

**Comment:** (p.10-20) Regarding the NPDES permit, elsewhere in the ER it is stated that HAR-2 and HAR-3 would discharge to the lake using the same outfall and PEC says here they intend to simple add these reactors to the current NPDES permit. However, one questions which would be worse, having excess heat or radioactivity (or other pollutants) discharged from one point without an easy way to determine where they are

coming from or having three outfalls (minimum). Currently I understood that there was more than one discharge point for the current reactor, turbine building, fuel pool, etc. etc. (0028-164 [Cullington, Liz])

**Comment:** 10.2.1.2 Hydrological and Water Use. (page 10-31) PEC says impacts of the heated water discharge to the reservoir.... are not irreversible ... because [they]... will be localized and only occur during operation of the cooling towers. This is misleading because surely there would of course continue to be some thermal discharges from the reactor when shut down, and continuously from the fuel pools. As to irreversibility, over time the thermal effects on Harris Lake over 60 years, added to 70 years of global warming effects from 2008 could well mean a combination of oxygen deprivation and algae that is not easily reversible. (0028-176 [Cullington, Liz])

**Comment:** Once again PEC assures us that Harris Reservoir will be replenished during periods of high flow (when possibly least needed) and not during drought periods, when most needed. This is nonsense and so one of two undesirable courses of action are possible. One is that withdrawals are limited by flow conditions in the Cape Fear, and PEC actually complies with those limits (though the state will not have someone stationed there to check), which means that water supply to the two new reactors will not be assured. The other is that PEC will withdraw water from the Cape Fear whenever it is needed, and that those withdrawals will have significant effects on both listed and non-listed aquatic species, and on water users downstream, with more concentrated contaminants and less supply. (0028-20 [Cullington, Liz])

**Comment:** PEC states that An alternative flow has been proposed to supplement the flows required from the Cape Fear River and would be to use effluent discharged from the proposed Western Wake County Regional Water Reclamation Facility (WRF). The use of WRF water has the potential for increasing nutrient loading to Harris Reservoir that is already eutrophic. It has been proposed to supplement the flows required from the Cape Fear River by using effluent discharged from the ... WRF to Harris Reservoir (impacts due to operation of the ..WRF are not included in this discussion of water-related impacts). ... This proposed WRF is beginning an {EIS}.... (p.5-20). This has been proposed by Progress Energy, not by some outside entity, and the State of North Carolina wants the water discharged to the Cape Fear River (from which it originates) not to Harris Lake. The State of North Carolina is requiring a Holly Springs WWTP that currently discharges to Harris Lake to relocate to a point on the Cape Fear instead. This WRF is under negotiation and mediation with the site's neighbors, Progress Energy, the state, the Corps of Engineers, etc. Therefore PEC should be required either to demonstrate that water supply will be adequate without this source, and without significant environmental damage, or the license application should be put on hold until this issue can be resolved. Both the siting and EIS process for this WWTP (also known at Western Wake Partnership) were conducted by consultants including one involved in the preparation of this Environmental Report and Combined Operating License (CH2M HILL). And its no wonder that Progress Energy might want the siting process to end up with a location near Harris Lake, even if the plan was to pipe around the lake, when the projected eventual discharge from the facility was more or less equal to the evaporative uses of the plant. However, the state of North Carolina has not approved this diversion into the Lake, and may well not, as it would mean 100% of the nutrients going into the lake instead of a diluted fraction, and with evaporation, potential rapid concentration of nutrients. In addition, the state had required that water withdrawn from the Cape Fear for distribution to various western Wake townships be returned to the Cape Fear to maintain

flow. Flow cannot be maintained if that water is evaporated at an equivalent rate. (In fact it seems questionable whether the chemical composition of treated wastewater is appropriate for nuclear plant cooling water.) (0028-21 [Cullington, Liz])

**Comment:** (p. 5-23) 5.2.1.2 Lakes and Impoundments. Normal releases of contaminants into the hydrosphere from the HAR facility will have negligible effects on surface and groundwater users but does not specify what could be done about tritium discharges since they cannot be filtered out. "Should an accidental release of contaminants occur, adverse impacts, if any, will be restricted to the area adjacent to the plant location." This is not accurate even in the immediate short term as it would depend on whether the lake level is low and being filled, or is discharging to Buckhorn and the Cape Fear River. Over the longer term many of these contaminants could be flushed into the Cape Fear which is a drinking water source for a large number of people. (0028-29 [Cullington, Liz])

**Comment:** 5.2.2 WATER-USE IMPACTS The NRC must include in the EIS an analysis of tritium buildup in Harris Lake for three reactors, particularly considering the following: Water distributed to many local towns is purchased from Harnett County and is withdrawn downstream of Harris Lake, from the Cape Fear River at Lillington. Some of this water is currently being discharged back to Harris Lake through the Holly Springs WWTP, and Progress Energy would like to divert the discharge from the Western Wake Partnership WWTP to Harris Lake, rather than to the Cape Fear, this water originates from the Cape Fear at Lillington also. Thus there is a significant potential for continued buildup of tritium and other contaminants in the water of both Harris Lake and the drinking water at Lillington, not merely by a factor of three, from 2 additional reactors, but more because the water is going to be going around in an endless circle. (0028-35 [Cullington, Liz])

**Comment:** 5.2.2.2.2. Water Quality. The applicant states that nutrients are of critical interest in southeastern lakes including, in fact Harris Lake. This is why the State of NC is requiring the Holly Springs WWTP discharge to be relocated away from its current location on Harris Lake to another directly discharging to the Cape Fear River. So that currently, water supply is being reduced with no assurance of other sources increasing the supply. Raising the level of the lake may increase its capacity, but it will not increase its supply. (p. 5-29) "An alternative lake water supply has been proposed to supplement the flows required from the Cape Fear River and be to use effluent discharged from the proposed Western Wake County Regional Water Reclamation Facility [aka Western Wake Partners] This would provide up to 12,500 gpm in 2020 and up to 20,834 gpm by 2030, if a decision is made to allow discharge of this water into the lake (Reference 5.2008)." (0028-37 [Cullington, Liz])

**Comment:** (p. 5-30) 5.2.3 Additional Impact Analysis Methods PEC points out that the assimilative capacity of the Cape Fear for wastewater nutrients would be reduced during drought conditions. This would be particularly true if the equivalent amount to what is withdrawn (and the state wants discharged back) is being evaporated instead, with the H<sub>2</sub>O going up in steam and the contaminants and nutrients being discharged over the dam (when and if) in concentrated form. The assimilative capacity is also going to be considerably less during drought for a relatively static lake compared to a flowing river, particularly when wastewater is a much greater percentage of the water supply for the lake. There is no assurance that the State of North Carolina is going to approve the creation of a new 7,000-8,000 acre liquid superfund site. But more importantly PEC is



suggesting that "appropriate use of water resources in the basin" is something that PEC can work out with state regulators during water quality permitting, even though this leaves the question of adequate water supply for two new reactors totally up in the air. (0028-40 [Cullington, Liz])

**Comment:** Table 5.2-4: I don't quite understand the point of a comparison of water chemistry data from Harris Reservoir and that in the Haw River at Moncure, since there is a PEC coal plant and a number of heavy industries that discharge into the Haw River there. (0028-46 [Cullington, Liz])

**Comment:** An instream flow study is needed to determine the effects of water withdrawal from the Cape Fear River. The NCWRC anticipates varying withdrawal limits based on existing flows in the Cape Fear River. For example, more water could be withdrawn from the river during high flow periods with minimal effect on the river while no water should be withdrawn from the river during low flow periods. We encourage Progress Energy to consider pumps of varying sizes to maximize flexibility in withdrawing water at varying water levels. The NCWRC also suggests that various maximum withdrawal rates be assessed. For instance, the overall ecological and hydrological impacts may be less if more water (e.g., 250 cfs) is removed from the Cape Fear River during high flow events (i.e., > 5,000 cfs) if this results in reduced need to withdraw water during average or low flow periods. (0034-11 [Stancil, Vann])

**Comment:** The Cape Fear River intake location should be configured in a way that minimizes environmental impacts during construction, operation, and maintenance. The proposed intake is located where Gulf Creek joins in the impounded Cape Fear River. Gulf Creek typically carries a higher sediment load than the Cape Fear River as indicated by the turbidity of Gulf Creek and sediment deposition in the river at the confluence. Water quality effects on Harris Reservoir from the Cape Fear River makeup water should be evaluated. (0034-12 [Stancil, Vann])

**Comment:** The NCWRC is also concerned about effects of Harris Nuclear Plant expansion downstream from the project. Currently, Buckhorn Creek, which is impounded by Harris Reservoir, has no minimum instream flow. An instream flow study should be performed to determine a suitable instream flow for Buckhorn Creek and that instream flow regime should be implemented. The instream flow regime should provide a minimum release from the Harris Reservoir dam and provide seasonal variation like that expected for an unregulated stream. Currently the remains of a hydroelectric plant on Buckhorn Creek serve as a barrier between the reach of Buckhorn Creek below Harris Reservoir dam and the Cape Fear River. Improved fish passage and implementation of an appropriate instream flow regime would greatly improve conditions in Buckhorn Creek. (0034-9 [Stancil, Vann])

**Response:** *Chapters 4 and 5 of the EIS will describe the methods and results of the evaluation of water quality impacts from the construction and operation of the proposed action. Included will be consideration of impacts to Harris Lake, Cape Fear River, and Buckhorn Creek downstream of the Harris Lake Dam. The NRC staff will include consideration of thermal, nutrient, and other pollutants. Because the State of North Carolina is the primary regulatory authority over water quality, NRC staff will work closely with state agencies. Representatives of several state agencies attended the site audit and discussed their specific concerns with the NRC staff. Because water quality actions*

also have an impact on aquatic ecology, the NRC staff will closely coordinate these reviews.

**Comment:** [H]as the applicant supplied comparative maps of the current 100-year and 500-year flood plains, and projected new 100-year, 500-year flood plains. (0028-3 [Cullington, Liz])

**Comment:** Has PEC analyzed the impacts on a higher level reservoir system and its watershed of a stalled hurricane like Hurricane Floyd? (0028-4 [Cullington, Liz])

**Comment:** Flood plain maps have been based on the assumption that frequency and severity of floods does not change over time. The Corps of Engineers, however, has recently completed a study of flooding on the Mississippi in the midwest, which finds that in the last 35 years there have been four 100 year floods. In the midwest 100 year floods are now occurring every few years, several within a decade or two, and 500 year floods every decade or so. (0028-6 [Cullington, Liz])

**Response:** *The safety of the plant from extreme events such as the Probable Maximum Precipitation and the resulting Probable Maximum Flood are described Section 2.4 of the applicant's Final Safety Analysis Report (FSAR). The NRC staff's independent evaluation of the applicant's FSAR will be described in the staff's Safety Evaluation Report.*

**Comment:** There are four reasons why we believe that Harris is an ideal site. First, and it was touched on, we have a sufficient water supply. Yes, we are talking about raising the lake level 20 feet, and really adding another four thousand acres of actually water supply to the lake. That's the Harris Lake. We also have the Cape Fear River. So we have a sufficient water supply. And I must say, when we went through the drought, we did not have a problem at all operating Harris. (0001-22 [Pinnix-Ragland, Hilda])

**Comment:** I mentioned the recent drought. It is important that we plan, so we can avoid an issue with the drought. (0001-26 [Pinnix-Ragland, Hilda])

**Comment:** Regarding the use of reclaimed water, it has been discussed in various forums that the Harris Lake would be required to be raised approximately 20 feet to accommodate the cooling requirements for the additional units. Providing such an additional volume of water, especially in light of recent droughts, can be a challenge. (0001-3 [DeBenedetto, Vinnie])

**Comment:** I do ask that the developers of the Environmental Impact Statement do consider all the comments and questions offered this afternoon, especially as it relates to water usage and downstream impacts. And as well as any contingency plans for drought and other response to that. (0001-31 [Griffin, Eric])

**Comment:** I would want to see stated in this review process the ability for Holly Springs and other municipalities to discharge reclaimed water into Harris Lake or some other means in order to take advantage of maximizing cooling water capacity. (0001-5 [DeBenedetto, Vinnie])

**Comment:** [W]e are certainly concerned with the use of water if Progress Energy expands the nuclear plant to two more reactors. (0001-55 [Smith, Jane])

**Comment:** At present we all know that Harris Lake serves as the source of water to cool the reactor. I would like to determine how Harris Lake could be safely enlarged. And let me say, we have no objection to that. It's your lake and your property and we are happy to have another large body of water in the area. (0001-56 [Smith, Jane])

**Comment:** I was told that rain fall would eventually fill the lake. I have maps that can show the gray areas, that show how the lake will be expanded. (0001-57 [Smith, Jane])

**Comment:** I hear that you may find it necessary to pull water out of the Cape Fear River near the Buckhorn Dam. Would that water be used to fill the lake, or would it be just a source of cooling for two new reactors? We do have an objection to that use for our Cape Fear water. Lee County has a good water system which we pay for and we planned for over 30 years ago. We draw water from the Buckhorn Dam area. We release it above the Buckhorn Dam. Therefore, we have a good supply of water for our industry and ourselves. (0001-59 [Smith, Jane])

**Comment:** The Cape Fear River is not important just for Lee County, but also for all of the towns and cities between us and the coast. So if you draw large amounts of water from the Cape Fear, you will impact many, many people. And we know that the nuclear plant will use 60 million gallons per day, at least. (0001-60 [Smith, Jane])

**Comment:** So if I didn't confuse you with the various scenarios of water use, let me ask my question. Where will you get the water to cool the reactors? And don't tell me as someone once did, I guess at that January meeting, that the state of North Carolina will determine that. Water must be a part of your plan for this expansion. (0001-61 [Smith, Jane])

**Comment:** We deserve to know where the water you need is going to come from. (0001-67 [Smith, Jane])

**Comment:** Water usage through the droughts. The long-term impacts of climate change, either through continuing droughts or through severe weather impacts. Those are the kind of -- you're going to need to look out 40 or 50 years and have good data on that or you won't be able to make a decision. (0001-90 [Runkle, John D.]

**Comment:** First, there is sufficient water supply, and all of us remember the drought. We faced it head on. But I am here to say that we did not have a problem at all operating the Harris Nuclear Plant. And that is a key message. We had adequate power supply for the water component. And no matter which base load generation you select, all of them require some kind of water usage. We have a wonderful lake. And yes, we have discussed raising the lake levels by 20 feet, and it actually includes an additional 4,000 acres to the lake. And we will have the adequate water supply once we do that. (0002-30 [Pinnix-Ragland, Hilda])

**Comment:** Even if two new reactors in Wake County were actually part of a solution to global warming, then we would still have to consider ... the problem of water supply for the two new reactors. (0002-64 [Cullington, Liz])

**Comment:** Water supply for these particular two new reactors at Harris is a vital issue. Several other speakers have mentioned this. Many people think that since four reactors

were once planned there, there's bound to be enough lake capacity already for the additional plants. However, during drought conditions, the current reactor has to have water pumped from the lower level larger lake to the smaller higher level reservoir. (0002-68 [Cullington, Liz])

**Comment:** Progress Energy plans to raise the level of the larger lake by 20 feet or more since the environmental report shows a map up -- the level up to 250. But even so, they feel it would be necessary to add a long pipeline to pipe water from that lake from the Cape Fear River. This is because Harris Lake, while already large in appearance, is only fed by very small creeks, not several large rivers like Jordan Lake. (0002-69 [Cullington, Liz])

**Comment:** The planned increase in reservoir capacity accounts for potential drought conditions in the future. By raising the lake level there is increased storage capacity and the ability to limit river withdrawals during times of drought. (0002-9 [Sauls, James])

**Comment:** Another huge issue is the water supply to cool these reactors. They would require pumping (and wasting from evaporation) millions of gallons of water from the Cape Fear River. This is water that may be needed downstream and might well NOT be available in times of severe drought such as what N.C. has been experiencing (and may experience more in the future due to global warming). (0004-3 [Blackburn, Jeanne])

**Comment:** In 2007, reduced rainfall in the Southeast began to have a noticeable effect on electric generating plants, and in particular, nuclear power plants, because of the vast quantities of water reactors consume. North Carolina remains in a drought and yet the SHNPP is proposing to permanently remove up to 120 MGD (millions of gallons per day). This is clearly in excess of the amount available in the Harris Lake or available from the Cape Fear River. (0005-12 [Runkle, John D.])

**Comment:** [The remove of 120 MGD]...would also affect public health and limit recreational opportunities. (0005-14 [Runkle, John D.])

**Comment:** It is unclear from Progress Energy's Environmental Report exactly how much water the two proposed units will require. The EIS should closely examine the need for the expansion of Harris Lake and the impacts of that expansion, or withdrawals of water from the Cape Fear. If the latter, the water would likely be withdrawn in times of low flow, causing downstream water quality and water availability problems. (0005-15 [Runkle, John D.])

**Comment:** [C]ontinuing droughts may limit the necessary water for cooling. (0005-17 [Runkle, John D.])

**Comment:** Nukes are increasingly unreliable due to climate change. The reactors Duke and Progress want to build use up to 60 million gallons of water a day. They will suffer even more shutdowns as droughts and heat waves increase. (0008-9 [Turk, Lawrence "Butch"])

**Comment:** Nuclear power facilities may not be ideal for a world with weather extremes. As technologies go, steam plants do best when it's cold and dry outside, and there's a lot of water that can be evaporated in the cooling tower. But in this area in recent years, it has been getting hotter, and water is in shorter supply. Won't output decrease and

electricity costs increase as summers get hotter and we start having more droughts like most climatologists predict? (0010-22 [Keto, Evan])

**Comment:** Please describe how a nuclear power plant can be expected to fare under drought conditions like those faced last year, and extended periods of 90 to 100 degree temperatures. When evaluating alternatives, please compare their performance under the same conditions. (0010-26 [Keto, Evan])

**Comment:** Progress Energy has stated in an environmental report that it intends to raise the level of Harris Lake to maintain the proposed operating water level of the main reservoir at 240 feet; and the Town of Holly Springs has the ability to provide Progress Energy with re-use water or treated wastewater originating from Utley Creek (a tributary to Harris Lake) that may reduce the need to raise the operating water level to 240 feet, which, in turn, might mitigate negative environmental impacts of such an increase and would benefit the environment, the applicant and the Town of Holly Springs. (0019-1 [Sears, Dick])

**Comment:** [T]he Town has commissioned a modeling study for Utley Creek having the conclusion that additional flow volume in Utley Creek would be environmentally beneficial to the creek and Harris Lake as a whole; and irrespective of the modeling study, the State of North Carolina has shown a preference for removing all discharge from Utley Creek and requiring the Town to discharge below the Buckhorn Dam in the Cape Fear River, depriving Harris Lake and the applicant of an additional water resource from the Town. (0019-2 [Sears, Dick])

**Comment:** BE IT FURTHER RESOLVED that the Holly Springs Town Council desires that the NRC address the environmental, socioeconomic and public safety concerns and findings of the Town by requiring the applicant to...study the issue of Holly Springs' removal of its wastewater discharge from Utley Creek to determine whether such discharge is beneficial, neutral, or adverse to the environment with respect to the increased lake level as necessitated by the applicant. (0019-7 [Sears, Dick])

**Comment:** The Town [of Apex] believes the additional water supply required for expansion of the power plant must be reliable. Current plans to supplement lake water during periods of drought by pumping from the Cape Fear River back to Harris Lake may not be cost effective or in the best interests of the downstream water users. (0020-4 [Radford, Bruce])

**Comment:** A better option may be that of placing the wastewater discharge from the proposed Cary, Apex, Morrisville and Holly Springs Regional Water Reclamation Facility directly into Harris Lake. This alternative should be fully considered. If the modeling of the lake indicates that this discharge is environmentally acceptable, Progress Energy should work with the local municipalities to develop this discharge alternative for Harris Lake. Progress Energy has indicated a strong interest in this idea. (0020-5 [Radford, Bruce])

**Comment:** We understand that Progress Energy is proposing to withdraw water from the Cape Fear River below Jordan Lake and above the USGS gage at Lillington. We recommend that the potential impacts to water supply of Jordan Lake be evaluated. (0021-1 [Gauss, Tim])

**Comment:** [T]he outflow from the Jordan Lake is controlled by the US Army Corps of Engineers to meet a target flow at Lillington, the effects on water quantity and quality resulting from potential withdrawals and discharges should be fully investigated. (0021-2 [Gauss, Tim])

**Comment:** Thirdly, an equally serious unresolved issue is that of water supply for the two new nuclear plants. In addition to raising the water level of the larger reservoir to 240 ft, Progress Energy is proposing a pipeline from the Cape Fear River with a pumping capacity of up to 60,000 gpm, greater than the "net consumptive"(evaporative) needs of the two new plants, and greater than the water use of the City of Raleigh. This scheme has not been approved by the state of North Carolina. (0022-4 [Bonitz, John] [Cullington, Liz] [Dukes, Patty] [Eads, Don] [Ellison, Margie] [King, Ed] [Meyer, Nick] [Royal, Lil] [Schwankl, Audrey] [Schwankl, Jimmy])

**Comment:** Progress Energy also discusses in the Environmental Report an additional, or alternate, proposal, which is to divert discharge from a Western Wake Partners waste water treatment plant directly into Harris Reservoir or the Auxiliary Reservoir instead of into the Cape Fear River as the state of NC requires. (0022-5 [Bonitz, John] [Cullington, Liz] [Dukes, Patty] [Eads, Don] [Ellison, Margie] [King, Ed] [Meyer, Nick] [Royal, Lil] [Schwankl, Audrey] [Schwankl, Jimmy])

**Comment:** It appears that water supply for two new reactors would be insufficient from merely raising the reservoir system level to 240 ft throughout. (0022-7 [Bonitz, John] [Cullington, Liz] [Dukes, Patty] [Eads, Don] [Ellison, Margie] [King, Ed] [Meyer, Nick] [Royal, Lil] [Schwankl, Audrey] [Schwankl, Jimmy])

**Comment:** The water supply for the two new nuclear plants has not been established. In addition to raising the water level of the larger reservoir to 240 ft, Progress Energy is proposing a pipeline from the Cape Fear River with a pumping capacity of up to 60,000 gpm, greater than the withdrawal needs of the two new plants, and greater than the water use of the City of Raleigh. This scheme has not been approved by the state of North Carolina. North Carolina continues to suffer from low water table conditions due to persistent drought, and all new water withdrawals must be considered in this light. (0023-5 [Chiosso, Elaine])

**Comment:** An alternative proposal to divert divert effluent discharge from a Western Wake Partners waste water treatment plant directly into Harris Reservoir or the Auxiliary Reservoir has not been approved either... (0023-6 [Chiosso, Elaine])

**Comment:** It is our understanding that Progress Energy is proposing to withdraw water from the Cape Fear River below Jordan Lake and above the USGS gage at Lillington. This withdrawal can affect water supply because the outflow from the Jordan Lake is controlled by the US Army Corps of Engineers to meet a target flow at Lillington. The effects - on water quantity and quality - of any potential withdrawals and discharges should be fully evaluated, including any potential impact on the low flow augmentation pool and the water supply pool of Jordan Lake. (0026-1 [Brown, Stephen J.])

**Comment:** The [Western Walce] Partners' currently proposed project includes a treated effluent discharge to the Cape Fear River downstream of Buckhorn Dam. However, the Partners have been working with Progress Energy and the NCDENR Division of Water Quality to evaluate the feasibility of a discharge to Harris Lake, which could become part

of the current Partners' project or a separate project. This would provide Progress Energy with a reliable water source, reduce impacts due to pipeline construction, and provide for beneficial reuse of the treated effluent. This alternative should also be fully considered as part of Progress Energy's environmental evaluations. If the modeling of the lake indicates that this discharge is environmentally acceptable, Progress Energy should work with the local municipalities to develop this discharge alternative for Harris Lake. (0027-1 [Brown, Stephen J.]

**Comment:** 9.3.2.2.1.3 The water metric evaluated for this site is the ability of a primary water source to provide adequate cooling water for a two-unit plant with cooling towers without significant permitting issues or operational restrictions. However, a) The water resource has to support THREE reactors b) The water supply is not only adequate within thermal limits (0028-108 [Cullington, Liz])

**Comment:** PEC claims that at full development, [with four reactors] the reservoir was to be recharged by pumping from the Cape Fear River in addition to the natural recharge from the watershed. This seems most unlikely to be true, or that the NRC would have permitted a site that it knew to have an inadequate water supply and to require pumping from an adjacent river. It seems far more likely that the water supply to the lake was initially overstated, and that drought conditions have proved it to be particularly unreliable. This in effect seems to be PEC saying that the NRC already ruled on the concept of a pumped water source when it initially approved the Harris site permit. (0028-109 [Cullington, Liz])

**Comment:** It might be noted that when the two new reactors were first announced, there was some acknowledgment that at the Harris site the level of the lake might need to be raised, but not a word about filling it from the Cape Fear on a continuous basis. If this had been part of some originally approved plan, why not mention that too? (0028-110 [Cullington, Liz])

**Comment:** (p. 9-61) "Analysis of a 100 year drought in both Buckhorn Creek and Cape Fear River, in connection with a hypothetical 4-unit operation at 100-percent load factor, resulted in the lowest reservoir level of 62.7 M (205.7 ft) ... at which point the plant would shut down." So much for reliable baseload power, especially during a heat wave. (0028-111 [Cullington, Liz])

**Comment:** p. 9-61 - 9-62 "During licensing ... the NRC concluded that the water supply was adequate for a two unit plant operation, including the Cape Fear River makeup system, and is also adequate in the event of a severe drought for both a one- and two-unit operation." Reference 9.3.001 Well what about a three-unit operation? It would appear that PEC is saying that the NRC ruled in the past that the "water supply" (inflow plus lake capacity) plus a pipeline from the Cape Fear, can't serve a third reactor. (0028-112 [Cullington, Liz])

**Comment:** (pp. 9-62 - 9.63) The normal rate of 2.34 m<sup>3</sup>/s (84 ft<sup>3</sup>/s) or 37,248 gpm, for operation and water quality control, is approximately 3.6 percent (2.35/m<sup>3</sup>/s / 65 m<sup>3</sup>/s = 3.6 percent) of the average daily flow reported at the USGS gauge at Lillington (USGS02102500). The rate at which water is withdrawn would be based on a set of operational rules designed to meet the target flows at Lillington as defined by the 1992 Water Control Manual for B. Everett Jordan Lake. But surely the times when water is needed from the Cape Fear and the most water needed are going to be times of

drought, when the flow is below average to both the Cape Fear River and the Harris Lake System. At those times, the percentage being withdrawn would be far higher than 3.6 percent. Drought would also mean more water being withdrawn elsewhere from every source upstream, and less of that water being returned as wastewater. (0028-113 [Cullington, Liz])

**Comment:** There are additional demands on Jordan Lake all the time, with much of the water going to irrigation or evaporation, and not being returned, and there is new drinking water reservoir for the Town of Siler City, being constructed on the Rocky River up stream, which will increase withdrawals that will not all be returned (especially during drought). The level of flow in the Cape Fear both at Lillington and the intake point needs to be calculated for drought conditions on the basis of current, and projected future, not old, data. (0028-114 [Cullington, Liz])

**Comment:** There are inconsistencies in the ER as to whether PEC will be seeking a new NPDES permit (as stated here) or a revision of its existing permit, as stated elsewhere in the ER. (0028-130 [Cullington, Liz])

**Comment:** Water-Related: Construction-related effects to surface water resources are relatively small but represent a natural resource that may no longer be available for use. However, as part of the natural hydrological cycle, this water is eventually recycled through the ecosystem. (Taking how long, decades? centuries? millennia? and exactly what is meant here?) How can PE make a statement like this and then say that impact will be small. This should be categorized as a LARGE long-term operational impact, as well. (0028-143 [Cullington, Liz])

**Comment:** Water related: PE says that effects on the Cape Fear would be minimized from abstaining from water withdrawals during periods of drought which means during an extremely hot dry summer the water supply for 3 reactors would not be adequate and thus not available to serve what PE says is needed baseload, which means that this alternative is not the best choice for reliable electricity supply. Of course elsewhere in the ER PEC states that pumping from the Cape Fear would be continuous. Obviously only one of these statements is true: either Drought and the small watershed for Harris Lake is not an issue because water will be pumped from the Cape Fear whenever needed to maintain the level of the lake. This could cause significant adverse effects on the Cape Fear River (and its downstream water users/customers) as well as to fish and aquatic organisms. or Rather than cause adverse effects to the Cape Fear, PE will only pump water when its least harmful, which could be when its least needed. The three units would not be able to operate during certain drought conditions as a reliable baseload supply, unfortunate for a summer peaking utility. This in turn would increase carbon emissions from other sources used to make up the downed nuclear plants. It doesn't matter what is in the NRC license or in the state water permits, because no-one is going to stand there 24 hours a day and check. So chances are that if a license is granted, severe adverse effects will occur. Even though the water use consumption rate is routinely given as 28,122 gpm (for two additional reactors) it apparently doesn't include an additional 11,377 gallons of water (per minute? it doesn't say) for fuel cycle activities (p. 10-6). Hopefully this refers to offsite activities. (0028-146 [Cullington, Liz])

**Comment:** There is no mention of the potential impact on Jordan Lake if additional releases have to be made to maintain flow in the Cape Fear River because of water withdrawn and evaporated by two new reactors. (0028-157 [Cullington, Liz])



**Comment:** (p. 10-19) was the 2002 drought as bad as the 2007 drought? PE should be required to provide data on flows in the Cape Fear River for the entire historical period (for which data is available). (0028-161 [Cullington, Liz])

**Comment:** (p. 5-18) Section 5.2 Water-related impacts. PEC states that Harris Reservoir has a watershed area of 70.3 sq. miles, and is currently 3661 acres, with a storage capacity of 90,000,000 cubic meters (73,000 acre feet). On page 5-19 in next section PE states that new acreage of lake would be 7616 acres and that capacity would be increased -- but PE doesn't say by or to 177,563 acre feet. But it is clearly to that capacity, as can be calculated. (0028-17 [Cullington, Liz])

**Comment:** And once again, the applicant states that nothing in the Cape Fear will be affected in spite of the fact that withdrawals from the Cape Fear to Harris Lake will be most needed during drought when they would have the greatest impact on the river, and for the three reactors to time withdrawals with spawning and low flows and droughts rather makes a mockery of the claim that nuclear is the best option for reliable baseload power. In addition, whether year round or not, long periods of continuous pumping from the Cape Fear, or even shorter, intermittent ones, are going to create a constant state of turbidity in the Cape Fear at that location, which will add sediment to the river downstream, which could decrease its "assimilative capacity" and stir up contaminated sediments. (0028-179 [Cullington, Liz])

**Comment:** PE states that 28,122 gallons per minute (gpm) is combined normal net consumptive water usage plus there would be a required 8,040 gpm discharge over Harris Dam to manage water quality. Which means that the actual water need is 36,162 gallons per minute, but PEC never adds these two together. Combined this equals 52,073,260 gallons per day (gpd) or 52 million gallons per day (mgd). (0028-18 [Cullington, Liz])

**Comment:** PEC says it will need to dredge the Cape Fear, though it not entirely clear if this is only prior to construction/installation of the intake, or as a maintenance measure. In either event this would be a sufficiently destructive activity that an area of the Cape Fear near the intake point will be an irreversible loss of habitat. This dredging also raises the question of whether the intake is to be placed low enough to be able to withdraw water even during low flows. This is just another reason why the NRC should not be actively reviewing the license at this time when state approval has not been obtained for the many alternative water supply stratagems suggested in this ER, none of which is without serious environmental (and public health) impact. (0028-180 [Cullington, Liz])

**Comment:** 10.2.2.2 Water resources. Although PEC points out that some of the cooling water would be lost through evaporation, they claim that impacts to water would not only be small but be replenished through the natural hydrologic cycle. a) not without constantly withdrawing water from the Cape Fear downstream, and b) there is ample evidence that natural hydrologic cycle in future cannot be assumed to remain the same c) wouldn't be "replenished" downstream in the Cape Fear River. Furthermore, water evaporated into hot dry air does not return as rain. (0028-186 [Cullington, Liz])

**Comment:** (p. 10-45) 10.3.1.2 Appurtenant Infrastructure. PEC states her that additional water from Cape Fear to Harris Reservoir if natural fill is not adequate and also to maintain 240 ft elevation and to support operation of the HAR as if its going to be

just an occasional thing, even though elsewhere in the ER the Cape Fear River is identified as being a continuous source (or a continuous source with some paper restrictions). The intake structure will be constructed immediately upstream of the Buckhorn Dam within the Cape Fear River channel. The pump house will be on the northern bank of the Cape Fear River adjacent to the existing discharge canal and remnants of the abandoned hydropower system that was located on the Buckhorn Dam. Is the dam still intact? There is not a single dam in Chatham County (for instance) that does not have a FERC applicant for hydropower generation. If the Buckhorn dam has a current applicant or licensee, did Progress Energy notify them that the company planned to take part of someone else's energy supply? (0028-198 [Cullington, Liz])

**Comment:** The water impacts involve evaporating vast amounts of water, polluting discharges, and effect on downstream flow (and on Jordan Lake, which would be required to discharge water during low flows in the Cape Fear. (0028-218 [Cullington, Liz])

**Comment:** What is typical of this ER is that this "alternative proposal" appears twice, but not in all other sections of the ER where only pumping from the Cape Fear is mentioned as an additional water supply. It is also not stated when the plant is to be operational, nor what the volume of discharge would be. (Sources indicate that if it is ever built, the capacity would be 9 mgd at startup, and 19 mgd later. It was hoped by the municipal planners that it could utilize all of the discharge allocation obtained from the state, 38 mgd, though it appears that the planned facility cannot expand to that extent. (0028-22 [Cullington, Liz])

**Comment:** The likelihood of Progress Energy relying for baseload needs on two additional 1,000 reactors, but timing water supply to these needs is not realistic. If these reactors were actually needed, as PEC claims, but has not demonstrated, the hotter the weather the more the plants would be needed in operation, and during a drought, the more water from the Cape Fear would be needed, as supply to the (currently two) impoundment(s) would be drastically reduced, and evaporation from the lake surface increased. (0028-220 [Cullington, Liz])

**Comment:** PEC further states that water withdrawals would be limited to only the minimum required for plant operation during periods of normal operation and low flow conditions and reduced to zero during severe drought conditions. During these severe drought periods, plant water use requirements would be met for a period of time by using available reservoir storage. What ever happened to the concept of an adjacent heat sink? It is not only normal operating conditions that water supply is needed for, and the water supply has to serve three reactors, one of which also has many years of spent fuel from four reactors in densely packed fuel pools. There's a pretty big heat sink requirement at the site at present, and more so when adding two more reactors, no matter what design. (0028-221 [Cullington, Liz])

**Comment:** PE states that the Cape Fear's "flow varies seasonally, with an average daily flow in 2005 of ... 1,034,556 at Lillington." What about other years, and what are the low flow figures? This is not good enough. What about 2007, which was a drought year? Drought increases evaporation water losses from rivers and lakes. (Source: Duke Energy spokesperson 6/20/08). Global warming is predicted to increase the frequency of heavy flooding as well as droughts and greater evaporation from water bodies. What evaporation model if any is PE using for water loss from the expanded lake area? What

temperature range is this based on, and does PEC project for increasing temperatures in the future? Warmer air can carry more water so would increase evaporation. (0028-23 [Cullington, Liz])

**Comment:** Right now the only assured water supply is natural filling, which PEC clearly indicates is not enough, and the NRC should put the EIS process and the license review on hold until Progress Energy secures states permits for whatever additional water supply PEC thinks they would need, and the state ensures that this water would be available without harming other water users, or water quality in the Cape Fear. (0028-25 [Cullington, Liz])

**Comment:** (p-10-89) Sheet 11, Water use: The consumptive water use from the Harris Reservoir for the HAR facilities is approximately... 28,122 gpm. The Harris Reservoir will supply adequate surface water for plant use. Not without building a new, higher dam it won't, not without pumping water continuously from the Cape Fear River it won't. And maybe not without an additional WWTP discharge that the state has not, and may never approve. (0028-255 [Cullington, Liz])

**Comment:** Sheet 17 loss of resources will be mitigated although it is clear, that the loss of some resources cannot be mitigated, one of which is the 28 thousand gallons a minute of freshwater that will be evaporated. (0028-257 [Cullington, Liz])

**Comment:** Low level conditions at Jordan Lake have an extremely severe series of impacts on recreation at Jordan Lake. 1) The designated swimming areas have artificial sand beaches and roped off areas. Swimming is not permitted beyond the rope line. The area for swimming shrinks as the lake level declines, and in extreme conditions can effectively vanish. 2) As the lake level drops the hazards of submerged snags to boaters increases. 3) The aesthetics of the area are sharply reduced. 4) Camp sites with water access instead have access to deep mud. 5) In extreme conditions, boat ramps could become unusable. (0028-27 [Cullington, Liz])

**Comment:** PEC states that "State water use guidance values are based on withdrawals of 20 percent or more of the 7Q10. For the Cape Fear River at Buckhorn Creek, this would equate to ... 76.4 ft<sup>3</sup>/s" but does this mean for every user or all users combined? p.5-22 "Assuming....a continuous Cape Fear makeup water flow rate of 18,088 gpm..." But PEC is trying to have it both ways yet again, saying that water supply is assured from the Cape Fear River, while saying it won't withdraw water from there during drought periods. What is this about October 1939? Harris Lake wasn't built then (0028-28 [Cullington, Liz])

**Comment:** (p. 5-24) PEC estimates that during and after land clearing etc. "6 inches of soil will settle at the bottom of Harris Reservoir." This of course would reduce the capacity of the reservoir, but doesn't seem to have been calculated. (0028-30 [Cullington, Liz])

**Comment:** 5.2.1.5 Conclusion. The plant water supply will be adequate with the transfer of water from the Cape Fear River to the Main Reservoir. But in an earlier section and in one other Chapter in the ER PE suggests tapping a fourth source, the Western Wake sewage plant in New Hill. Given the amount of space in the application given to the proposed pipeline from the Cape Fear to Harris Lake, PEC cannot hedge its bets regarding whether or not it would have access to another source, by the phrase

"transfer of water from the Cape Fear River." All this raises the question of water supply adequacy for two new reactors. A larger lake (at 240 ft) was presumed adequate for four reactors. An Auxiliary Reservoir at 240 ft and Harris Reservoir at 220 ft was assumed adequate for two reactors in the Operating license, but has required pumping from the lower to the upper to support just one (source NC NPDES permit for Shearon Harris Nuclear Plant [unit one]). Since the lake was first created, an additional water supply has been added to Harris Lake from a Holly Springs sewage treatment plant which the state is now requiring to relocate away from the Lake to the Cape Fear River. But raising the lake to 240 feet is not apparently enough for just 3 reactors now, but would require pumping water from the Cape Fear, and a considerably prolonged effort to get at the discharge from the Western Wake sewage treatment plant. This would seem to indicate that natural filling is not enough, even if supplemented by a withdrawal from the Cape Fear River, which the state has not approved, but that another state which the state has not approved and may never approve is also needed. (0028-32 [Cullington, Liz])

**Comment:** 5.2.2.1.1 Water Availability. The environmental report and/or draft EIS for the relicensing of the current Harris reactor stated that current operations can lead to low water flows in Buckhorn Creek. There is a complete inconsistency in the applicant's statements: lower flow or no-flow periods may occur during drought periods when reservoir levels fall below the proposed normal...240ft. and "Since Buckhorn Creek is rated as supporting aquatic life, NC DENR will likely require a continuous minimum flow below the Main Dam to maintain aquatic habitat." So which is it? Once again, PEC is trying to double dip, to make the same water stay in the lake and be discharged. The NRC should wait until all these water supply and water quality issues are resolved by the state before continuing to review the license application. Because water supply is possibly the most essential siting requirement. In addition, this is hardly a SMALL impact on Buckhorn Creek. (0028-36 [Cullington, Liz])

**Comment:** (p.5-31) PEC appears to have gone ahead and modeled more than the Cape Fear pipeline as a water source. They state they have modeled hydraulic residence time...under both potential inflow alternatives compared to the existing conditions. Does this mean also the Western Wake wastewater plant discharge option? (0028-41 [Cullington, Liz])

**Comment:** (p. 5-33) Table 5.2-1: PEC lists municipal water users downstream but does not list their gpd demand which would be more relevant than their zip code. They also don't list here the low flow data at those intake points. (0028-42 [Cullington, Liz])

**Comment:** It should be noted that Fayetteville is guaranteed to need more water because the Base Realignment and Closure Commission is consolidating a number of bases to Fort Bragg. (0028-43 [Cullington, Liz])

**Comment:** (p.5-34) Table 5.2-2: Buried in this table is the rather astonishing fact that the pipeline PEC plans from the Cape Fear would be powered by 3 pumps of 20,000 capacity each, and that 60,000 gpm would be the total or maximum lake makeup flow withdrawal from Cape Fear River. That's way in excess of the operating needs of the two new reactors, and is equivalent to 86.4 million gallons a day. It doesn't matter if PEC says that this would not be continuous demand, it is just for emergencies, this is a huge withdrawal that is more than the City of Raleigh. Raleigh water customers by comparison, consume about 49 million gallons a day. (Source: Raleigh News and Observer, Jan. 25, 2006) (0028-44 [Cullington, Liz])

**Comment:** DWR's water management concerns revolve primarily around the proposed withdrawal of water, called make-up water, from the Cape Fear River to the Harris Reservoir to raise the water surface elevation 20 feet and maintain the reservoir at a new, full pool elevation of 240 feet, mean sea level. (0029-1 [Sutherland, John])

**Comment:** DWR is also concerned about what flow regime will be maintained in Buckhorn Creek, located downstream of the expanded Harris Reservoir. (0029-2 [Sutherland, John])

**Comment:** Addressing DWR's flow concerns will require analysis of hydrology and ecological responses to changes in flow. (0029-3 [Sutherland, John])

**Comment:** The Cape Fear River Basin Hydrologic Model is a basinwide model for the Cape Fear River basin which should be used to evaluate the hydrological effects of various project operation scenarios. This model is in the public domain and has been accepted for use by stakeholders in the basin. Using the model will allow simulation of various flow thresholds for the withdrawal of make-up water from the Cape Fear River, as well as various flow regimes downstream of Harris Lake reservoir. The model will also allow consideration of the hydrologic effects of the discharge by the proposed Western Wake wastewater treatment plant to Harris Lake versus a discharge to the Cape Fear River. (0029-4 [Sutherland, John])

**Comment:** The state owns a portion of the water supply storage in the US Army Corps of Engineer's (Corps) Jordan Reservoir, located on the Haw River upstream of the proposed Cape Fear River withdrawal site. The state also manages recreation sites and environmental lands around the Jordan Lake. In addition, DWR is responsible for overseeing allocation of Jordan's water supply storage, and works closely with the Corps and water users (both downstream and reservoir withdrawals) to manage releases and reservoir levels during drought. The Corps manages Jordan releases to meet target flows on the Cape Fear River downstream of the proposed Harris withdrawal site. Use of the Cape Fear River Basin Hydrologic Model to evaluate withdrawal scenarios will allow examination of any potential effects on how Jordan Reservoir would need to operate to maintain downstream flow targets - and the resulting effects on the water quality and water supply storage pools in the reservoir. (0029-5 [Sutherland, John])

**Comment:** WHEREAS, in the light of persistent drought conditions and demands for water, there are serious concerns about the adequacy of cooling water available for additional reactors at Shearon Harris. (0031-11 [Jacobs, Barry])

**Response:** *Chapters 4 and 5 of the EIS will describe the methods and results of the evaluation of water use impacts from the construction and operation of the proposed action. Included will be consideration of impacts to Harris Lake, Cape Fear River, and Buckhorn Creek downstream of the Harris Lake Dam. The NRC staff's review will be performed over a range of climate conditions including drought. The NRC staff will consider the opportunity to mitigate possible impacts by considering alternative water supplies (including wastewater) and alternative operating practices of the reservoir and Cape Fear River makeup pumps. Because the State of North Carolina is the primary regulatory authority over water use and water quality, NRC staff will work closely with state agencies. Representatives of several state agencies attended the site audit and discussed their specific concerns with the NRC staff. Because water use actions also*

*have an impact on water quality and aquatic ecology, the NRC staff will closely coordinate these reviews.*

## **8. Comments Concerning Hydrology – Groundwater**

**Comment:** The geology and hydrology that was studied on the western shores of Harris Lake, what was clear after ten years of trying to demonstrate that you could monitor the site with monitoring wells and detect radioactivity that was traveling with groundwater, the fractured nature of the site essentially meant that you could not know where to place your monitoring wells to be sure you captured groundwater flowing. And I understand that there are monitoring wells required to test for radioactivity in groundwater for nuclear plants as well as for radioactive waste sites. And I would request that all the documentation from that ten years of study and analysis, many experts, all be considered and looked at in scoping the EIS. (0001-137 [McDowell, Mary])

**Comment:** 9.3.2.2.1 Existing HAR site (p.9-60) No surface faulting or deformation has been identified at the site. No areas of volcanic activity, subsidence... This is not accurate. The entire Triassic Basin is full of faults and volcanic dikes, which is what makes it's groundwater impossible to predict. (0028-105 [Cullington, Liz])

**Comment:** (p. 10-32). PEC says that there will be no groundwater withdrawn for use at the site, so there will be no impacts to groundwater. But this ignores the fact that Harris Lake will receive tritium and other discharges from three reactors and their numerous chemical as well as radioactive processes. Harris Lake is located in a zone of fractured rock, the Durham-Triassic Basin, which was extensively studied as a potential site for a multi-state LLRW "disposal facility," but which could never be satisfactorily modeled, let alone monitored. The hydrology of the site is such that: a) multiple hydrological connections are possible between near surface points and deep aquifers (and back again); b) many years and millions of dollars could not characterize the hydrology of a mere 500 acre site; What cannot be characterized cannot be adequately monitored and so there is every expectation that new reactors at Harris would increase contaminant impacts on hydrological (groundwater) resources in the vicinity, and that no amount of added monitoring wells is going to detect, let alone prevent this. (And as noted above, monitoring wells only detect harm after it has occurred. The hydrology of this area is such that groundwater cannot effectively be remediated." In addition, raising the lake level of 4055 more acres could create new areas of intersection between lake water and groundwater, creating new routes of contamination, and also possibly new discharge points. (0028-177 [Cullington, Liz])

**Comment:** (p.5-19) 5.2.1 HYDROLOGICAL ALTERATIONS AND PLANT WATER SUPPLY. An issue that needs to be addressed in the EIS is the effect on immediately local soil saturation and groundwater discharge if the lake level is raised. There could be significant impacts on adjacent landowners because of the curious hydrology of the Durham Triassic Basin, with a fractured rock geology that proved incapable of characterization during almost a decade's worth of effort and hundreds of millions spent on fruitless studies, by the NC Low-Level Radioactive Waste Management Authority. (See comments on Chapter 6, monitoring, below) (0028-19 [Cullington, Liz])

**Comment:** Water use: PE totally fails to discuss the potential impacts to groundwater at a particularly complex site, either from leaks at the plant site, or from Harris Lake. (0028-191 [Cullington, Liz])

**Comment:** PEC cannot adequately monitor for groundwater leaks from HAR-2 and HAR-3 (or Harris 1) because of the curious geology and hydrology of the Durham Triassic Basin, with a fractured rock geology that proved incapable of characterization during almost a decade's worth of effort and hundreds of millions spent on fruitless studies, by the NC Low-Level Radioactive Waste Management Authority. If you cannot characterize a site it means that all the groundwater flows cannot be mapped and modeled, and therefore you cannot place monitoring wells in such a way as to detect contamination before it reaches other wells or water bodies. (0028-47 [Cullington, Liz])

**Comment:** (p. 9-53 Harris is a "solid rock site" compared to other sites. However, the Harris site is actually one of fractured and compressed bedrock. The underlying geology of all three plant sites and Harris Lake, is one which has been demonstrated to be incapable of being characterized for groundwater modeling, and therefore monitoring. This is a significant issue given the new issue of tritium leakage into groundwater at nuclear power plant sites, or from the lake, issues which were not anticipated when the Harris site went through it's initial NEPA review. (0028-98 [Cullington, Liz])

**Response:** *The exact pathway of groundwater in environments such as those that exist in the shallow, fractured bedrock formation beneath the Harris site are difficult, if not impossible, to predict. The uncertainty of the exact flow path can be compensated for by considering a suite of alternative conceptual models. The NRC staff will consider a diverse set of plausible conceptual models and will identify the most conservative plausible conceptual model on which to base its assessment. While the NRC staff may not be able to define with confidence the exact pathway of groundwater flow, it can bracket the impact by determining the impact of the most conservative conceptual model. The NRC staff will review the consequences of an accidental release of radionuclides in its Safety Evaluation Report.*

**Comment:** Other information has reached me stating that Progress Energy has told the Utility Commission that they are considering drilling wells so that groundwater could be used for cooling. Of course that would have a significant impact on grounds and surface water supplies, particularly in our area which may be drought prone. (0001-58 [Smith, Jane])

**Comment:** There might be other sources for water cooling other than the Harris Lake. One such source could be drilling wells to access ground water. I would request the NRC to deny such request if indeed it is part of the application. I wouldn't want to see surrounding area ground water supplies be jeopardized. (0001-6 [DeBenedetto, Vinnie])

**Response:** *The NRC staff will describe and evaluate the impacts of any use of groundwater on local groundwater users during construction and operation of the proposed plants in Chapters 4 and 5 of the EIS.*

## 9. Comments Concerning Ecology – Terrestrial

**Comment:** 5.2.1.3 Groundwater. PEC wants to get credit for "wetland mitigation" by expanding the width of the stormwater drainage ditches near the discharge points although it remains to be seen whether or not the rate stormwater discharge in the type of gully washer rains typical of NC's climate (and increasingly almost the only type of rain in any season) would be too much to maintain wetland habitat. Most stormwater channels built around here that channel stormwater into ponds are rocky chutes that would become torrents during storm events. (0028-31 [Cullington, Liz])

**Response:** *The NRC staff will address wetland mitigation in Chapters 4 and 5 of the EIS.*

**Comment:** 9.3.2.2.1.4 Terrestrial Ecology [Endangered Species] PEC states that the forested land to be cleared for lake expansion is home to endangered red cockaded woodpeckers. It is not that easy for them to simply relocate as PEC states. These woodpeckers are shy, avoid human activity and human noise, and would inhabit older growth areas where there are decaying trees for food and nesting. Destruction of known habitat of these birds appears to violate the site selection criteria that PEC lists. (0028-115 [Cullington, Liz])

**Response:** *The NRC staff will review and evaluate the data on important species and potential loss of habitat for alternative sites in Chapter 9 of the EIS.*

**Comment:** 9.3.2.2.1.5 Aquatic Ecology. Wetland areas created or modified during construction. These would be inundated, but new wetland areas would be created. What about thermal impacts on any endangered amphibian species in wetlands? Triple the reactors means triple the heat discharged to the lake, and heating is most pronounced in shallow water, especially during the summer. (0028-116 [Cullington, Liz])

**Response:** *NRC staff will consider and evaluate thermal impacts to wetlands in Chapters 5 and 9 of the EIS.*

**Comment:** PEC states that permanently flooding 4055 acres of wildlife habit has only a small impact, whereas under the criteria cited and used, this would have to be considered LARGE. For one thing it's a permanent and total loss and for another a large area of land is involved. And not just any land but mostly forested wildlife habitat with access to water, which has remained virtually or totally unchanged for the last 25 years or so. And home to at least one federally listed species if not more. (0028-147 [Cullington, Liz])

**Response:** *The NRC staff will address the impacts of raising the reservoir level on wildlife habitats, wetlands, and important species in Chapters 2, 4, and 5 of the EIS.*

**Comment:** No mention [in Chapter 10] of wild turkey habitat loss. (0028-156 [Cullington, Liz])

**Response:** *Wild turkeys will be considered in evaluating important wildlife species using the Harris site. This comment is within scope and will be addressed in Chapters 2 and 4 of the EIS.*



**Comment:** (p.10-22) Terrestrial and Aquatic Ecology. PEC says that flooding of an additional 4,055 acres will have MODERATE impact, but isn't the permanent loss of habitat (flooding then contamination) LARGE? There is no mention here of the impact on both terrestrial and aquatic ecology of pesticide spraying along expanded, relocated transmission line ROWs. This could be significant where ROWs cross forested land as some birds prefer open edges of this type and could consume sprayed berries etc. There is an even greater potential impact from pesticide spraying and that is spread to cropland or pastureland or ponds. (0028-166 [Cullington, Liz])

**Response:** *The NRC staff will address impacts of improvements to transmission line rights of way and management actions to maintain transmission line rights of way in the EIS.*

**Comment:** Temporary loss of habitat is simply unacceptable. There is no such thing as temporary loss of habitat. It is equivalent to expecting humans to raise their kids on the moon, without oxygen. Habitat would need to be continuously maintained for nesting water fowl. There is absolutely no assurance by PE that new habitat will be created in a timely manner, and nature would take a long time to recreate it, if in fact its possible given a different topography at a different elevation. Much more important is the permanent destruction of red-cockaded woodpecker habitat. (0028-144 [Cullington, Liz])

**Comment:** 10.2.1.3 Ecological. (p. 10-32) In spite of the information to be gleaned elsewhere in the ER regarding the permanent habitat loss for listed and endangered species and other wildlife, PEC feels free to state in this section that there will be only a minimal short- or long-term effect on terrestrial ecology. This should not be allowed to stand. Once again we have the incorrect assertion that the area where the units will be located is already disturbed whereas the sites of HAR-3 was cleared land, and HAR-2 grassed over. In what way is this "adapted to anthropogenic disturbance"? As is shown in NEI/PEC preliminary seismic work photographs (March 1 2007) regardless of what PEC has done to the land since. The aerial view in Figure 4.00-03 also shows cleared but vegetated land and not the uses that PEC refers to (parking lot etc.) (p. 10-33) Similarly, PE refers to the pipeline site as edge habitat as if that meant marginal at best, whereas water edge habitat is itself a specialized habitat for particular species, as is the river itself. The pipeline doesn't have just a site, it has an intake point and pumphouse, a discharge point into the lake system, and a new route in between which appears to cross privately owned land as well as PEC land. Surprisingly PEC does admit, however, that in flooding an additional 4055 acres, fauna of the area will be displaced and the flora will become submerged (though they don't mention that actually the flora will first be logged, burned and crushed, as will no doubt be some species. Once again PE posits the totally unrealistic notion that there is somewhere else for all this flora and fauna to relocate to. As stated above, there is nowhere protected for them to go. (0028-178 [Cullington, Liz])

**Comment:** As stated elsewhere in my comments, PEC has stated or implied elsewhere in the ER widespread loss and disruption of habitat, so cannot claim that The HAR does not result in any significant long-term detrimental disturbance to biota or their habitats. (0028-239 [Cullington, Liz])

**Comment:** Expansion of the reservoir will result in the inundation of 78,438 m of stream channel resulting in a loss of the biological functions and habitat that these stream channels provide. The conversion of this lotic habitat to lentic habitat should be mitigated

for, preferably by restoring and permanently protecting lotic habitats in the proximity of the project. Also, approximately 47 hectares of wetlands along the perimeter of the reservoir will be inundated by the Harris Reservoir expansion. However, the reservoir expansion also has the potential to create new wetlands. Any difference between the amount of lost wetlands and the created wetlands should be mitigated either by restoring or permanently protecting existing wetlands in the proximity of the project. (0034-4 [Stancil, Vann])

**Comment:** If Harris Reservoir is raised to 240', 1619 ha of wildlife habitat in a rapidly urbanizing area will be flooded. Unfortunately, this reduction in available habitat will compound problems arising from the existing loss of habitat to residential development in Wake County. Flooding of this 1619 ha will also mean the loss of approximately 818 hectares of Game Lands, some of which were set aside as mitigation for the construction of the original reservoir. As mitigation for loss of habitat and Game Lands, Progress Energy should permanently protect a comparable area of land in close proximity to the project. (0034-5 [Stancil, Vann])

**Comment:** Ecologically significant upland areas that will be flooded include portions of three Significant Natural Heritage Areas (SNHAs). According to the COLA Environmental Report, the lake level rise will inundate 36% of the Holleman's Crossroads Slopes SNHA, 8% of the Jim Branch/Buckhorn Creek forests SNHA, and 1% of the Utley Creek slopes SNHA. The greatest impacts will occur to Holleman's Crossroads slopes, a site of county significance that contains "shaly," mafic soils that support the rare chalk maple (*Acer leucoderme*) that is not known from elsewhere in Wake County. The lake level rise will also impact one known Bald Eagle nest near the Utley Creek Slopes SNHA, and a heron rookery near the Jim Branch/Buckhorn Creek forests SNHA. To mitigate for loss of these unique ecological features, Progress Energy should fund the permanent protection (through acquisition or purchase of conservation easement) of unprotected Significant Natural Heritage Areas in close proximity to the project. (0034-6 [Stancil, Vann])

**Comment:** Many of the environmental impacts of this project are caused by inundating streams, wetlands, and upland habitat. One way to minimize these impacts is by raising the lake to a new elevation that is less than 240'. The NCWRC understands the need to raise the water level at Harris Lake to support two additional nuclear units. However, we would like to see the effect of other lake levels on plant operations and natural resources evaluated as well. (0034-8 [Stancil, Vann])

**Response:** *NRC staff will review and evaluate habitat loss and associated impacts in Chapters 2, 4, and 5 of the EIS.*

**Comment:** (p.10-24) Re wetlands, it appears that wetlands could be impacted by transmission line crossing. This could mean that in addition to those wetlands that would be flooded, some wetlands could be filled in to create transmission tower concrete footings. (0028-169 [Cullington, Liz])

**Response:** *The potential impacts to wetlands in transmission line rights of way will be addressed in the EIS.*

**Comment:** 10.3.1.4 Air. Currently timber is being harvested near the HAR site Are they trying to chase out the woodpeckers in advance? Are they doing all the mitigation measures they said they'd take in future? (0028-201 [Cullington, Liz])

**Comment:** The majority of Harris Reservoir's current shoreline habitat is wooded and natural. This should be maintained as much as possible, as the lake is expanded to a new shoreline. Where possible, woody debris and standing timber should remain in place to enhance fish and wildlife habitat. However, timber should not be left standing in areas where it might compromise boater safety. When logging operations and any land disturbing activities are carried out, Best Management Practices should be in place and sedimentation should be contained as much as possible. (0034-3 [Stancil, Vann])

**Response:** *The NRC staff will consider and evaluate impacts to terrestrial biota from timber harvests along the reservoir shoreline in Chapters 4 and 10 of the EIS.*

**Comment:** Table p. 10-11. To mitigate impact on listed red-cockaded woodpeckers PE lists as a mitigation measure this inadequate suggestion avoid interfering with red-cockaded woodpeckers (federally protected) by limiting timber harvesting near nesting areas and educating timber harvesters. Firstly, the idea of educating timber harvesters (a fancy word for logging crews) is no easy feat and this is just complete nonsense. The woodpeckers are going to abandon their nests as soon as logging and land-clearing noise disturbs them, and just leaving a few trees is pointless, they need the whole forest for both food and habitat and they need a large area free of human disturbance. The land is going to be flooded but chances are the woodpeckers would have been chased out by then. So it doesn't really matter what PE says its going to do, these federally listed woodpeckers are going to lose almost 3,000 acres of forested habitat to water if the NRC approves this project. There is no assurance that nearby land is appropriate habitat, and none of it is protected land. What is forested is all commercial land. As for the blue heron rookery, PE obviously considers that if they aren't on the verge of extinction AND federally listed, they don't count. PE just says they will consider limiting construction activities near the existing blue heron rookery during nesting season. Well excuse me but the only places usually that you see blue herons at all are places that are extremely quiet and free of noisy and destructive and sediment producing activities (because herons need to see underwater to fish). PE doesn't define what near is and its pretty clear that they are not committing to give a hoot or to protect the herons, who are, in any event going to lose their current habitat. It would be years before the activities at the lake settle back down into relative quiet and even if there were shallows for them at the higher lake elevation level, it is pretty much guaranteed that they will be gone. PE does not mention bald eagles which began to migrate over to Harris Lake from Jordan Lake in the 1985-1987 period. PE doesn't say anything about protecting their nests. The woodpeckers, herons, and numerous other species are not going to be mitigated by PE posting signs prior to extremely noisy construction activities like pile driving as mentioned on p. 10-12 (as something that only affects people). As serious as the noise impacts on people living near by could be, the impact on wildlife could be more drastic in terms of loss of habitat. (0028-150 [Cullington, Liz])

**Comment:** (p.10-47) 10.3.1.6 Terrestrial and Aquatic Ecosystems. Biologists conducting an ecological survey in August 2006 at the HAR sites observed no important vegetative or wildlife species. However this is in the context of a discussion of the construction footprint area only, with no indication that the 2006 survey covered the entire area to be affected. logged, flooded, dredged etc. etc. Elsewhere in the ER there are numerous mentions of important, indeed listed endangered or threatened species

and their habitat, including red-cockaded woodpeckers (habitat to be razed and flooded) and mussels (spawning grounds near proposed water intake on Cape Fear River, etc. What does PEC mean by important and how extensive was this survey? Shouldn't the NRC insist on an independent survey of the entire affected area, rather than depending on that by a contractor who is paid by the applicant, and to do all kinds of unrelated work. (Which means no way of telling who did what, whether they were qualified, or whether they just drove past, or what.) (0028-202 [Cullington, Liz])

**Response:** *The NRC staff will address impacts to important terrestrial species and potential mitigation in Chapters 4, 5, and 10 of the EIS.*

**Comment:** A Corps permit, issued in October 1977, authorized the fill required for the construction of a dam on Buckhorn Creek which created Harris Lake. This lake was necessary to supply cooling water to the power generating unit and was described in the permit as having a normal pool elevations of 220 msl. The current proposal, as described in the ER, is to increase the lake's normal pool elevation to 240 msl by augmenting the standard flow into the lake with a pumping system on the Cape Fear River, immediately upstream of Buckhorn Dam. After considering the purpose and need associated with the installation of the intake pump and the outfall device in Harris Lake, we have determined that the increase in pool elevation constitutes a change-in-use for the earlier permitted dam. This change-in-use would result in impacts by inundation to approximately 115 acres of wetlands and over 50 miles of streams. Due to the large amount of aquatic impacts from this proposal, we have determined that this proposal would require an Individual Department of the Army Permit. (0033-1 [Manuele, Jean B.]

**Comment:** The Corps is mandated to review permit applications according to the 404(b)(1) Guidelines which dictate the overall evaluation process. Since power generation is not a water dependant activity, other alternative which might have less aquatic impacts are presumed to be available. Under this assumption, only the least environmentally damaging practicable alternative (LEDPA) can be permitted after a fair review of the alternatives. The ER details several alternative sites that were evaluated and ranked below the preferred site at Shearon Harris. However, the sites were evaluated using the criteria NRC established in 10 Code of Federal Regulations (CFR) 51, Appendix B, Table B-1, Footnote 3 which uses a SMALL, MEDIUM or LARGE designation on the alternatives. No detailed environmental information is listed for any alternative beyond the designation stated above. In order to comply with the 404(b)(1) Guidelines, environmental impacts must be quantified for a fair comparison between alternative sites. Please provide this data for Corps review along with data relevant to the public interest factors stated above. (0033-3 [Manuele, Jean B.]

**Comment:** As part of the LEDPA exercise, the proposal is assessed for avoidance, minimization, and finally mitigation in that respective order. Since the final permit can only be for unavoidable impacts, any aquatic features on site that can be avoided by modifying the project or the plans should be preserved. For example, while the water within Harris Reservoir is used for cooling purposes, PEC indicated that the purpose/need for the Harris Reservoir expansion is solely for economics. This would provide enough cooling water to run the plant during a severe drought without reducing the power output of the plant. Economic justification for aquatic impacts is not an easy process and would require an in-depth assessment of any available alternative which might further avoid or minimize aquatic impacts. Any viable project modification that minimizes the adverse impacts to streams and wetlands must be fairly evaluated. The

ER does not report any onsite avoidance and minimization measures that have been considered. (0033-4 [Manuele, Jean B.]

**Comment:** Additionally, all unavoidable impacts must be properly mitigated. While it is understood that inundating a stream or wetland is not a complete loss of waters of the U.S., it is a change in aquatic function which would require mitigation. Compensatory mitigation should take place before or concurrent with the impacts and should be located as close as possible to the impact site. Due to the potential size of the impacts associated with this proposal and the resulting mitigation amount, early coordination with the regulatory agencies is critical. (0033-5 [Manuele, Jean B.]

**Comment:** As stated above, impacts to aquatic features could be in excess of 115 acres of wetlands and over 50 miles of streams. The ER states that GIS methods were used to estimate these impacts with some field checks to corroborate the findings. To date, the Corps has not been requested to verify these aquatic features. Wetland and stream verification on a project this size could be a time consuming process, therefore the Corps recommends that this process begin as soon as possible. (0033-6 [Manuele, Jean B.]

**Comment:** Finally, all aquatic impacts associated with this project must be reported and assessed during the EIS process including alterations to roadways and utility lines, relocating park facilities, installation of blow-down lines, dredging within the Cape Fear River, etc. (0033-8 [Manuele, Jean B.]

**Response:** *The NRC received official notice of the U.S. Army Corps of Engineers' interest in becoming a cooperating agency for the Shearon Harris COL EIS. The NRC has agreed by letter dated September 19, 2008 [ADAMS Accession Number ML0825206649] to invite the U.S. Army Corps of Engineers to serve as a cooperating agency in the preparation of the EIS for this licensing action. This comment falls under jurisdiction of the Corps pursuant to their regulatory authority under Section 404 of the Clean Water Act. The Corps will have the opportunity to request this information through the formal Request for Additional Information (RAI) process as set forth in 10 CFR 51 and 52. Impacts to terrestrial wetlands and aquatic features resulting from raising the level of Harris reservoir will be addressed in Chapters 4, 5, and 10 of the EIS.*

## **10. Comments Concerning Ecology – Aquatic**

**Comment:** The removal of this quantity of water [120 MGD] would have a significant impact on fish, benthic invertebrates and other wildlife in the Harris Lake and Cape Fear River. (0005-13 [Runkle, John D.]

**Comment:** No aquatic species in the HAR site that are included on federal or state lists of endangered or threatened species but what about the effects of pumping water out of Cape Fear? PEC details listed species and spawning grounds near the propose intake for the pipeline, and states they won't pump during spawning season. Would they actually shut the plant down if needed? It seems most unlikely and there is not going to be anyone posted to check when they are pumping. In many sections of this ER PEC states that pumping would be continuous. (0028-117 [Cullington, Liz])

**Comment:** Once again PE makes the obviously insincere or practical assurance that the facility (sic) will adhere to applicable.... regulations and permit requirements with

regard to water usage to avoid removal of water from Cape Fear River and Buckhorn Creek during sensitive spawning periods and/or during draught(sic) conditions. But PEC has not obtained those permits yet, so these assurances are meaningless. (0028-219 [Cullington, Liz])

**Comment:** This project has the potential to impact the Cape Fear River because Progress Energy proposes to pump makeup water from the river to Harris Reservoir. The Cape Fear shiner (*Notropis mekistocholas*) is endemic to the Piedmont portion of the Cape Fear River basin and is found in the Deep, Rocky, and Haw river systems upstream of Buckhorn Dam. Additionally, one Cape Fear shiner was collected from the Cape Fear River downstream of Buckhorn Dam near Erwin in 2007. The Cape Fear River is also home several state listed mussel species. Two mussel species found in the upper Cape Fear River are classified as Federal Species of Concern: Atlantic pigtoe (*Fusconaia masoni*) and yellow lampmussel (*Lampsilis cariosa*); these species are also listed as State Endangered. Four additional mussel species found in the upper Cape Fear River are listed as State Threatened: creeper (*Strophitus undulatus*), eastern lampmussel (*Lampsilis radiata radiata*), Roanoke slabshell (*Elliptio roanokensis*), and triangle floater (*Alasmidonta undulata*). The notched rainbow (*Villosa constricta*) is a State Special Concern species and the eastern creekshell (*Villosa delumbus*) is a State Significantly Rare species. (0034-10 [Stancil, Vann])

**Comment:** As the reservoir is raised, the following concerns need to be addressed to ensure the continued integrity of the Harris Reservoir fishery. Most of the game fish in Harris Reservoir are nest spawners (largemouth bass *Micropterus salmoides*, crappie *Pomoxis* sp., and various sunfish *Lepomis* sp.) and spawn adjacent to the shoreline during the Spring. These species could adjust to a gradual change in water level, yet sudden changes could be detrimental and should be avoided, particularly from March to June. A better understanding of the rate of water level rise considering withdrawal from the Cape Fear River, Unit 1 operation, and water release into Buckhorn Creek during dry and wet conditions would help when developing plans to minimize impacts on spawning fish. (0034-2 [Stancil, Vann])

**Response:** *The NRC staff will consider and evaluate impacts to aquatic biota from water withdrawals from the Cape Fear River and Harris Lake for operation of the proposed new nuclear units in Chapter 5 of the EIS. While NRC does not regulate or manage water resources, it does have the responsibility under NEPA to assess and disclose the impacts of the proposed action on water resources.*

**Comment:** (p..9-116) The increase in the water level of the reservoir will be relatively slow. Cape Fear will have to be dredged. Dredging would have a severe impact on the listed aquatic species and their spawning grounds, especially those species that are not speedily mobile, such as mussels. (0028-129 [Cullington, Liz])

**Response:** *The NRC staff recognizes that dredging the Cape Fear River at the proposed intake site has the potential for adverse impact to aquatic organisms. The current aquatic environment, including species composition and habitat in the vicinity of the proposed intake, will be discussed in Chapter 2 of the EIS.*

**Comment:** If there are any mussels left alive after the construction of the new water intake/pipeline, and its operation, PE says that these protected mussels and fish will be fine because PE won't withdraw water during spawning periods. Do they even know

when those are? What if the water is needed? Once again PE says of course it won't pipe water from the Cape Fear during drought. Then what's the point? In addition, turbid conditions could persist. (0028-162 [Cullington, Liz])

**Response:** *The NRC staff will assess potential impacts to spawning activities in the vicinity of the proposed intake on the Cape Fear River in Chapter 2 of the EIS. Based on this analysis of what species are likely to spawn in the habitat in question, an analysis of operations impacts for withdrawing water from the Cape Fear River will be presented in Chapter 5 of the EIS. While NRC does not regulate or manage water resources, it does have the responsibility under NEPA to assess and disclose the impacts of the proposed action on water resources.*

**Comment:** (p.10-21) PEC says that a mitigating measure for water related impacts is to coordinate with USFWS and NCWRC to identify other federally or state listed species within HAR site and vicinity. This is not a mitigating measure. (0028-165 [Cullington, Liz])

**Response:** *The NRC's responsibility under NEPA is to provide a fair and comprehensive analysis of potential impacts related to the proposed action, to evaluate alternatives, and to suggest mitigation if deemed necessary. Approval of other Federal and State permits associated with the proposed new nuclear units and any requirements for mitigating actions will be the responsibility of the permitting agencies.*

**Comment:** Determining how changes in the Cape Fear River's hydrology will affect the downstream aquatic ecosystem will necessitate additional studies and habitat modeling. A first step might be to use the Index of Hydrologic Alteration (IHA) to evaluate the effect of the withdrawal of make-up water from the Cape Fear River. Then it may necessary for PE [Progress Energy] to conduct a site-specific study of the relationship between instream flows and aquatic habitat - probably using the Instream flow Incremental Methodology. PE will need to work closely with review agencies, starting with study planning and continuing through data collection, model calibration, habitat modeling (including time series analysis) and evaluation of results. Fortunately, DWR recently completed a similar study with PE for the relicensing of its hydroelectric project on the Pee Dee River. (0029-6 [Sutherland, John])

**Comment:** The dam for Harris Reservoir presently has no minimum release requirement downstream to Buckhorn Creek. Expansion of the reservoir could increase the duration and frequency of conditions when the reservoir level is below the spillway crest and there is no flow provided downstream. PE [Progress Energy] will also need to conduct a site-specific study of the relationship between instream flows and aquatic habitat for this stretch of stream so that an appropriate downstream flow regime can be determined. (0029-7 [Sutherland, John])

**Response:** *The NRC staff recognizes that the suggested studies may be necessary for state licensing requirements. While NRC does not regulate or manage water resources, it does have the responsibility under NEPA to assess and disclose the impacts of the proposed action on water resources. Any information that is available regarding the Instream Flow Incremental Methodology (IFIM) study at the time the EIS is prepared will be included in the EIS as part of Chapter 2 under characterization of aquatic habitats.*

## 11. Comments Concerning Socioeconomics

**Comment:** In 2005 we formed a committee, a blue ribbon committee that will look at core infrastructure needs in Wake County over the next 25 years, because every day 107 people either move to Wake County or are born here. That's 38,000 people a year. When you look at Forbe's Magazine, whether it's Raleigh, Cary, Holly Springs, they all constantly show up as key communities where people want to move to for good high paying jobs. So it's important for us to have that core infrastructure in place; water and sewer, open space, education, transportation. (0001-10 [Bryan, Joe])

**Comment:** That means that many roads need to be widened, and adequate linkage to the proposed 540 toll road be constructed. The citizens of Holly Springs do not feel this road building and reconstruction is their responsibility. (0001-2 [DeBenedetto, Vinnie])

**Comment:** With growth for our region of the state projected to exceed 25,000 new homes and businesses annually, it's crucial that the infrastructure which supports this growth be maintained and expanded to meet demand. And as Chairman Bryan mentioned, just as roads, schools, water and sewer are essential for development, efficient and economical electricity serve as a magnet for business development. By 2026 Lee County's population is projected to grow to over 85,000 people, according to our county statistician. And we are very encouraged that Progress Energy is planning well into the future for the growth that we believe is coming. (0001-37 [Joyce, Bob])

**Comment:** We know that in the future we're going to continue to grow. We've got to have as a part of that infrastructure, as mentioned by Joe Bryan and others, that supply of electrical power, or we won't be able to continue to attract the new investment of jobs that we brought here. (0001-71 [Winters, Mike])

**Comment:** Look at the cost of the two new reactors, we're look at for each person in the Progress Energy service area, three to \$4,000. So a family of four would have 12 to \$16,000 worth of money that are going into this nuclear power plant. Local governments, Chamber of Commerce, you need to really put that in your plans how much money this is going to cost. (0001-81 [Runkle, John D.])

**Comment:** They own property miles away from the plant. And I think some -- should be a provision if you're going to give them a permit, then they should dispose of this property because it's inhibiting the growth of this town for commercial and residential to expand. Because it comes within a half of mile of here is Progress Energy property, and it goes all the way back to Harris Lake. And we need some of that property for commercial development. I think it's a good place to put plants and for industry. But until that land is released, they own the land, they pay for it, so they say what happens to it. So I would encourage them to please make some kind of arrangement before this two more plants are built where this property can be used for the benefit of the citizens of this area. (0001-97 [Holleman, Gerald])

**Comment:** [A] nuclear plant makes a good neighbor. It supports high paying jobs directly at the plant, generates additional jobs in the community where it is located, and contributes by helping to build good schools, good roads, and civic improvements. (0002-110 [Hummel, Bill])



**Comment:** Electricity is a vital part of our state's infrastructure, as are roads, schools, and water. This area's impressive infrastructure serves as a magnet for businesses and economic development. (0002-8 [Sauls, James])

**Comment:** One thing I'll have to say about Progress Energy that I absolutely love and adore, and it was stated by Mr. Goodwin, is their community partnership. You see the name everywhere. I mean they're helping in all kinds of ways, they are involved, they want to get involved with communities. They want to show people that they are concerned about the community. I have participated in many of the things that they have been behind, and I love the theater and I go to the Progress Energy place in Raleigh and take my daughter to see the Nutcracker and saw a great production of Man of La Mancha last year. They do wonderful things that way. (0002-86 [Schwankl, Audrey])

**Comment:** The EIS should also examine the forecasted increase in vehicle use on the highways in the area. Given the traffic increases and population growth, the major thoroughfares used as evacuation routes may be impassible at most times of day without extensive new spending on highway expansions and improvements. (0005-4 [Runkle, John D.]

**Comment:** Progress Energy owns approximately 32% of the Town of Holly Springs' planning and future growth area, as specified in Vision Holly Springs: Town of Holly Springs Comprehensive Plan, adopted in November 2007; and with so much of the Town of Holly Springs future growth area owned by the applicant, the socioeconomic environment of the community would be protected if the applicant were to provide for private sale and/or development of any property in excess of what would be needed for the raised lake levels. (0019-6 [Sears, Dick])

**Comment:** BE IT FURTHER RESOLVED that the Holly Springs Town Council desires that the NRC address the environmental, socioeconomic and public safety concerns and findings of the Town by requiring the applicant to...consider options for disposing of excess applicant-owned property to promote and protect the economic and socioeconomic environment of the community of Holly Springs. (0019-8 [Sears, Dick])

**Comment:** Roads in that area, aside from US 1, are all rural 2-lane state-maintained thoroughfares that may require upgrades prior to or following the plant expansion. ...[L]ong term evacuation needs should be addressed. ...When addressing these traffic impacts, roadway upgrades should be consistent with the Apex Transportation Plan and should be reviewed by Town staff. The Town would also appreciate a copy of the Traffic Impact Study to review and provide more specific comments. (0020-3 [Radford, Bruce])

**Comment:** PE claims that the operational impacts from these new plant roads are expected to be small but this section is supposed to discuss effect of the plant on the current road system, and if roads have to be widened, that is at least a moderate effect under the definitions provided. Moreover, PEC fails to mention the hundreds of new construction workers commuting to the plant on roads that the taxpayers would have to maintain or improve, such as 751, 42, 64, US 1, and so on. (0028-10 [Cullington, Liz])

**Comment:** (p. 10-46) 10.3.1.3 Relocated Infrastructure. PEC states that relocated infrastructure includes, structures within Harris Lake County Park, the Wake County Fire Training Facility, the Shearon Harris firing range, several Progress Energy Carolinas, Inc. (PEC) facility buildings, four boat launches, multiple segments of roadway, and

transmission towers... Relocation areas above the ... 240 ft. ... contour have not been determined yet. PEC has not included the land use impacts of all these relocations in its comparison of alternatives. Secondly, these are additional hidden costs. Thirdly, PEC needs to provide more detail about what PEC "facility buildings" would need to be relocated (where are they now, what are they, where to be moved to, and the cost). (0028-199 [Cullington, Liz])

**Comment:** 10.3.1.10.1 Transportation. PEC states here that there would be 3,150 construction workers traveling to and from the site daily, during the peak period of construction (when HAR is 50-70-percent complete, But which one? Or does that peak occur twice, and for how long?). If PEC builds two reactors staggered by 2 years, and needs those workers for 2 years, that could mean 4-5 years of those extra vehicle trips, during rush hour. That is going to be a pretty significant impact on two lane country roads. PEC cites only two highways as affected, US 1 and Old U.S. Highway 1 (which is a narrow 2-lane country road). However, traffic to the plant would also add congestion to US 64, Hwy. 42, Hwy. 55, and many other roads. (0028-206 [Cullington, Liz])

**Comment:** No mention of the impact of noise, traffic, logging, sediment, and other construction impacts on recreational use of the entire lake and its surrounds, nor the long term effect on fishing. These detrimental effects could reduce the value of housing nearby without this adjacent resource, even if only for 10 years. Nevertheless, for a home-seller that could seem a lifetime. (0028-212 [Cullington, Liz])

**Comment:** 10.3.2.9.1 Transportation "As discussed in Section 5.8, roads and highways in the vicinity will not be significantly impacted by operation of the HAR." Presumably this is because the roads would be so impacted by extra traffic during construction that PEC will have arranged with DOT to expand and modify local roads, as they say they will do. As I have commented elsewhere, PE is incorrect to state that traffic impact would only be on U.S. 1 and Old US 1. PEC claims that the traffic count for both roads is identical, 1800 AADT, which seems statistically impossible. The existing workforce for HNP consists of 764 employees. It is anticipated that [it will take] approximately 773 people to operate the HAR facility. So after the surge of construction workers has finally come and gone, the traffic to the site during operation of two additional reactors would be double what it is at present. (0028-225 [Cullington, Liz])

**Comment:** 10.3.2.9.3 Labor. PE claims that an potential influx of new employees is not significant because they would most likely live in the largest city in the area. But PEC can't dictate where they live. They may prefer shorter work commutes, especially if they have children who would have long school bus rides no matter where they live, which appears to be the case with the Wake County school system. (0028-226 [Cullington, Liz])

**Comment:** A nuclear plant is intrinsically an environmentally unjust installation because the risk of accidents means potential evacuations and potential exposures, so the siting preference is for areas of lower density population. Yet these areas would typically show not only a lower energy use per acre, but most probably per capita as well, with the growth in both population and electricity use occurring elsewhere. All the rural residents living near the plant in Chatham, Lee and Harnett Counties will not even get the purported indirect benefit of increased tax revenue to their county if two new reactors are built (and of course payments of any kind never go to the people who are actually hurt, in health, loss of property value or other harm.) (0028-235 [Cullington, Liz])

**Comment:** Table 10.4-1 Sheet 3 Land Use: The new reactors will be co-located with the existing nuclear facility This is misleading since the new reactors will not utilize the existing footprints for 3 additional reactors. The only infrastructure that would be utilized by the new units is the current switchyard, by HAR-2, with HAR-3 requiring a new switchyard. Nor does this land use impact summary mention the additional changes in land use detailed in this ER for two new reactors: additional land to be purchased/taken for expanded ROW's for new transmission lines, additional land used for new roads, road expansion, and new internal roads. relocation of transmission lines that would be flooded, road work related to new lake level, the flooding of an additional 4055 acres, new land uses for relocated Harris County Park Facilities, new land uses for relocated PEC buildings, etc. etc. (0028-248 [Cullington, Liz])

**Comment:** Table 10.4-1 Sheet 5 Construction and operation activities should not have long term adverse adverse impacts to recreational use of the Harris Reservoir and the surrounding area (This is totally contradicted by the more detailed text of the ER which identifies but does not quantify the loss of land at Harris Lake County Park, but does quantify the loss of almost one third of forested game lands to flooding. (Sheet 6 indicates that this includes wild turkey habitat. As ground nesters wild turkeys are disappearing from our state at a rapid rate chased out by development, logging and human encroachment.) (0028-249 [Cullington, Liz])

**Comment:** Sheet 14, Socioeconomic: Only Wake County is cited, and the largest towns near the HAR site are Cary and Raleigh, says PE, 13 mi and 21.7 miles, ignoring Apex, Holly Springs, Fuquay-Varina, and also ignoring Sanford and Pittsboro. Holly Springs is currently undergoing a building and business boom as it is at the bottom end of a new outer-outer-loop express tollway around Raleigh, Cary etc. (0028-256 [Cullington, Liz])

**Response:** *Impacts of plant construction and operation on the use of existing local infrastructure including transportation networks, emergency services, and other community services or the need for such new infrastructure are within the scope of the socioeconomic impacts and will be addressed in Chapters 4 and 5 of the EIS.*

**Comment:** Currently the Harris Plant employees approximately 450 people, an additional 200 contractors. Approximately 640 additional people would be needed to operate two new reactors at the site. (0002-11 [Sauls, James])

**Comment:** Currently the Harris Plant contributes 126 million in personal and property income, and 30 million in tax revenue to the surrounding area. (0002-12 [Sauls, James])

**Comment:** The plant generated roughly 700 million dollars in economic output for the eight-county or triangle region. (0002-15 [Craig, Lee])

**Comment:** The plant supports more than 2,100 jobs in the region. The plant generates nearly 130 million dollars in personal income. And the report estimates that the plant generates roughly ten million dollars in indirect business taxes. These are largely sales taxes and another 20 million dollars in local property taxes. Income tax estimates are excluded from the report. (0002-16 [Craig, Lee])

**Comment:** The average additional annual impacts during construction are projected to be as follows: Roughly 340 million dollars in economic output, 3,500 jobs, nearly 160

million in income, and 14 million in indirect business taxes, and 10 million in municipal and county property taxes. (0002-17 [Craig, Lee])

**Comment:** Once the new facility is fully operational, the report estimates that the combined Harris facility will generate annually, and again as a reminder, these are inflation adjusted figures, 2.2 billion dollars in output, nearly 5,000 jobs, more than 300 million dollars in income, and 27 million dollars in direct business taxes and 30 million in municipal and county property taxes. (0002-18 [Craig, Lee])

**Comment:** [A]t current property tax rates in the Triangle, the property value required to generate the 30 million dollars in property taxes, that's the 30 million which I had just cited a moment ago in reference to one additional reactor, is approximately 4.3 billion dollars. That figure would be roughly two and a half percent of the total value of assessed property in the Triangle at the time of the study. Again, that was 2005. Professor Ericson concludes that by any reasonable economic comparison, these must be considered large economic impacts. (0002-19 [Craig, Lee])

**Comment:** Since July 2003 which was the bottom of the recession driven employment decline in North Carolina, our state over that four and about half years, our state has added 416,000 jobs through the first quarter of this year. That's an average of 89,000 jobs per year during that time frame. And in 2007, as measured by the payroll survey, our state added more jobs than all other states, except Florida, Texas, and California. Generally those new jobs have been in sustainable, well-paying industry sectors and include both commercial and industrial users of power. During this decade, North Carolina's population has grown by about a million residents, or 12.6 percent. And as I think many of you know, in 2006 the state became the tenth largest in the nation, surpassing New Jersey in population. (0002-42 [Fain, Jim])

**Comment:** [W]ho would be hired under the proposed action. Would North Carolinians make up the majority of the workforce at the proposed facility? Or would more people move to the area to work at the plant, adding to congestion problems? I think most people would much prefer that people already in this state be given preference to work here, if it is approved, to reduce unemployment. (0010-20 [Keto, Evan])

**Comment:** 10.2.1.10.3 Labor. Is PE committing to use unionized labor? Local labor? To only hire contractors who will provide adequate wages, benefits and workmen's comp coverage? If so, they don't say so. This would cut down on both injuries and environmental impacts. (0028-209 [Cullington, Liz])

**Comment:** (p.10-51) 10.3.1.10.4 Tax revenues and economic characteristics. Sales taxes will be levied on materials purchased for the HAR as well as on goods and services purchased by workers..... there may be SMALL direct and indirect beneficial economic impacts from sales tax revenue generated from goods and services purchased by workers who do not currently work in the region. Three bogus points here. 1) The bulk of the money spent on materials will go out of state to Westinghouse for all the modular components, and out of the local region or state for rebar etc. 2) Workers who live here would likely be spending little more than they normally do so there would be no additional sales tax revenue locally. 3) Workers who move in may end up paying sales tax here rather than somewhere else, but anyone who thinks local jurisdictions can provide services to new residents based on sales taxes knows nothing about how local budgeting works in this state. The only new residents who aren't a drain are rich people

who build million-dollar mansions pay their property taxes on time, and don't have lots of children in the local schools. A temporary influx of new workers is likely to have a net detrimental effect and do so also in another area that of putting additional pressure on limited rental housing stock, reducing availability and raising rents. This will disproportionately affect local low income residents. PEC on the other hand thinks this is not a problem because (p. 10-52) the number of available year-round housing units and because housing units in the region are abundant but that is overall units, not affordable ones. The typical rent for a small family home in Chatham County for instance is \$1,200, and there are only a handful of rentals available at any one time. It is not possible to believe that the majority of workers moving here for temporary work are going to buy a home, even if they are financially able, because of the uncertainties of the future housing market. Much of the housing stock that PEC cites, even if rental rather than expensive homes for sale, is expensive rentals far away from the work site. (0028-210 [Cullington, Liz])

**Comment:** 10.3.1.10.6 Educational system. For some reason PE doesn't think that an influx of new workers would have an impact on the local Wake County school system, because the county is planning an expansion, but presumably this expansion was planned to meet current growth rates, not the influx of new construction workers for two new reactors. If these workers are only here for a few years, their families could create a shortage of school places and then a surplus, which would be a net financial loss for affected counties. In addition, there is no guarantee that workers will either come from or live in Wake County, so extra strains could be put on school systems in Harnett, Lee, Chatham, and Durham Counties as well. Chatham County is struggling to expand its school system for current projected needs without an additional several thousand families. Generally speaking, financing of additional school space per pupil is predicated on the concept of a family residing in the same jurisdiction over most of a lifetime and paying for public schools over a lifetime through property taxes. (Most of those of us who are childless don't object to paying for schools because we don't want to live in a society of yahoos.) A temporary influx of a large number of workers for a large project means a bulge in demand for school places without the long-term revenue to pay for it. Sales taxes won't make a dent. So the economic impact of an imported construction force might sound good to some, but it would have an overall negative economic impact. (0028-213 [Cullington, Liz])

**Comment:** As I have noted elsewhere, the only materials purchased locally would be concrete and any tools that workers are supposed to provide themselves, a tiny amount compared to the total planned investment. (The reactor vessel for instance has to be manufactured in Japan.) (0028-228 [Cullington, Liz])

**Comment:** Sales taxes paid by new workers do not cover their demands on local services, in fact nor do their property taxes unless they are in very expensive homes. (0028-229 [Cullington, Liz])

**Comment:** PEC's current real and personal property tax to Wake County is only 2.3 per cent of the county's total revenue. Curiously, PEC doesn't point out how much more in tax they would pay if HAR 2 and HAR 3 are built because they don't want anyone working backward to figure out that the plants would have a \$20 billion price tag, or maybe far, far higher (0028-230 [Cullington, Liz])

**Comment:** 10.3.2.9.6 Education. PEC claims that there would be no impact on local school systems from the families of new plant workers, just as they do for the influx of new construction workers, by projecting that all those workers would live in Wake County (which is a totally unreasonable assumption, because both construction and plant workers will live where they want or where they can afford.) Secondly, it is extraordinarily unlikely that the Wake School expansion plan to accommodate anticipated growth included growth from the construction of new reactors, any more than plans for new schools in Chatham do. These plans are based on projected new housing more than projected new jobs. In addition, PEC has been assiduously saying at every turn in the press and public that they are still just "preserving their options to build new reactors as part of a diversified ..... etc. etc." (0028-233 [Cullington, Liz])

**Comment:** Section 10.4.2.4.6 Socioeconomic. Elsewhere in the ER, PEC brushes off the impact of new construction workers and new operating phase workers on the infrastructure of the vicinity, area, region. However, in this section PE admits that it is anticipated that additional infrastructure and services would be needed to meet the demands of the people moving into the area to support the construction and operation of the new facility [sic]. However, PEC claims that this would be offset by the increased tax revenues and economic input from those individuals and families. As I have already commented, services provided by counties are only fully paid for by property taxes on the most expensive houses. This assessment of additional demands on infrastructure is repeated in the summary also. It is likely therefore that this is the correct assessment, and that different findings elsewhere in the ER are wishful thinking or manipulation of data and conclusions. (0028-244 [Cullington, Liz])

**Comment:** It is also not true that the immediate local counties who receive local tax revenues from the plant would see an increase. The current and new nuclear plants are physically located in Wake County. Wake would receive more revenues on the new plant through property taxes, less the lower valuation on the newly flooded land. Chatham County receives tax revenue only from land and lake, not buildings, and the drop in tax revenue would be likely be sharp in the change from land to water. (0028-247 [Cullington, Liz])

**Comment:** WHEREAS, the Harris Plant has a substantial economic impact on the Triangle region, annually contributing \$20 million in municipal and county real property taxes to the area; and WHEREAS, an expansion would add \$10 million additional tax revenue for the area. (0030-2 [Bryan, Joe])

**Response:** *The EIS will evaluate the expected economic impacts of construction and operations activities including any local purchasing of production inputs, local and in-migrating labor, local spending of earnings, and tax revenues generated by local purchasing activities or from real property assessments in Chapters 4 and 5 of the EIS.*

**Comment:** [W]e've had very significant high paying jobs currently as well as in the future, the jobs that will be created from the building of plants, as well as people that would be permanently employed there. (0001-13 [Bryan, Joe])

**Comment:** Clearly, it is a significant tax base for our community. (0001-15 [Bryan, Joe])

**Comment:** Now the area is growing over one hundred people moving in every day to Wake County alone. In fact, we expect to actually double. Can you imagine that

doubling, the 500,000 customers we already serve, so another million really a million customers in the next 30 years or by 2026? (0001-17 [Pinnix-Ragland, Hilda])

**Comment:** [T]he Harris Plant provides jobs, almost 450, plus an additional 200 contractors at various times. New jobs provided by an expansion would be welcomed, especially as our area continues to lose precious high-paying manufacturing jobs. (0001-39 [Joyce, Bob])

**Comment:** Our research shows also that the plant contributes about 125 million dollars in personal property income, and over 30 million dollars in tax revenue to the surrounding communities. This represents a significant portion of our local economy, for which we are grateful. (0001-40 [Joyce, Bob])

**Comment:** [W]e've got the big smoke stack and all of the money has been spent in Raleigh. We would like to have some of those funds spent in our area that they're doing in the Raleigh area. And we are going to get two more smokies and I hope along with it will come some compensation, some added things for the people of this town. (0001-96 [Holleman, Gerald])

**Comment:** [I]nducing good new jobs and investment depends on many variables, certainly including the availability of reliable and affordable electric power. (0002-39 [Fain, Jim])

**Comment:** Having safe, reliable, and reasonably priced electricity is a critical component for our continued job creation and for us to maintain a high quality of life that we enjoy in this region. (0002-7 [Sauls, James])

**Comment:** This is a matter that is vital to the future of the state's economy and to the businesses that operate here. (0006-6 [Ebert, S. Lewis])

**Comment:** But a recent well to wheels life-cycle analysis by the Electric Power Research Institute and the Natural Resources Defense Council shows that a shift by the U.S. to plug-in vehicles would cut carbon emissions by as much as 500 million tons annually and 10 billion tons cumulatively by 2050. At the same time, other exhaust pollutants would decline. They found that the U.S. power grid could easily handle the load of three-quarters of Americans switching to plug-ins, which require only about 1 to 2 kilowatts -- about the energy load of a dishwasher. The cost of that electricity for transportation would end up being about a 75-cents-per-gallon energy equivalent, according to the study. Can Plug-In Hybrids Ride to America's Rescue? ABC News, 7/19/08 <http://abcnews.go.com/print?id=5406454> Firstly, not all vehicle owners are limited to the range of the vehicles coming on line in a couple of years, and would opt for hybrids if they can actually afford a new vehicle, which would add no demand. Secondly, for plug-in vehicles to be adopted in such a widespread manner to increase PE's demand significantly would require a program of financial incentives or tax credits at the state and/or federal level. These would be unlikely to pass without also being tied to credits for the installation and/or generation of solar, wind, and other green technologies. These measures might well also address additional incentives and programs to reduce demand from other residential (and other) electricity use (appliances, insulation, smart meters etc. etc.) (0028-53 [Cullington, Liz])

**Response:** *These comments provide no new information relevant to the environmental review of the COL application and therefore will not be evaluated further.*

**Comment:** Following construction of the Harris Plant in the late '80s, many of those involved in construction remained in our community to raise their families and start businesses. Serving more than half a million residences and business, the Shearon Harris Plant and its employees are an essential part of the community life of central North Carolina. (0001-36 [Joyce, Bob])

**Comment:** We talk about sustainability and the triple bottom line, and that is the issue of environmental stewardship, social equity, and economic vitality. And we believe that any community can not survive without a balanced presence of all three of those in the community. If you want to see communities that are the most environmentally degraded, look at ones that have pushed economic issues above all else. If you want to see communities with absolutely no economic vitality and no ability for children to live and work and stay in their own communities, look at communities that have paid no attention to economic issues. So we really believe that anything, whether it be an energy policy or any kind of big development that happens, has to balance all three of those things. (0002-50 [Badrock, Anita])

**Comment:** The socioeconomic impacts on the Moncure area since the Harris plant was completed have been severe. The town continues to have no commerce to speak of, no laundromat, no sewer and lower house prices than elsewhere in the county, all this in spite of access to US 1 and a fast commute to Cary. The reason is that the local government considers this an industrial sacrifice area. On the other hand, areas a similar distance to the east of the plant have housing marketed to people from outside the area who don't know the nuclear plant is there. (0028-104 [Cullington, Liz])

**Comment:** The expansion of Harris Reservoir will provide positive outcomes for fishery and recreational resources but at the same time will negatively affect other natural and recreational resources. Positive outcomes include increased reservoir surface area which will accommodate a greater number of anglers and boaters. Also, for several years after the reservoir expansion, the fishery should improve due to the "new reservoir" effect. (0034-1 [Stancil, Vann])

**Comment:** As the reservoir level is raised, both boating access areas operated by the NCWRC will be flooded. These boating access areas represent the only access for motorized boating to Harris Reservoir. Progress Energy should replace both of these boating access areas and ensure that capacity at each at least matches what is available now. A recreational study and comparison with other reservoirs may help anticipate access needs for the enlarged reservoir and help determine if another boating access area is needed. Such a scenario is likely because the increased surface area of the reservoir will likely lead to an increase in motorized boating use. Plans will also need to be developed to provide recreational access to Harris Reservoir during the transition period when the water level rises and existing access areas are no longer usable. (0034-7 [Stancil, Vann])

**Response:** *These comments cite some of the projected socioeconomic impacts on local communities from plant construction and operations. Impacts to community characteristics will be evaluated in Chapters 4 and 5 of the EIS.*



**Comment:** Look at the real demographics of the area. Not just be, well, we are going to double our population. But what does that population look like now? What is the health of that population? There is susceptible populations out there, children under age, the handicapped, the ill, that are not going to be able to get out of the way in case there is any kind of unplanned release. (0001-86 [Runkle, John D.]

**Response:** *Examination of several demographic segments of the population will be provided in Chapter 2 of the EIS. Community characteristics and factors that make the communities in the vicinity and region of the proposed action distinctive also will be described in Chapter 2 of the EIS. Any projected impacts on the character of the communities affected will be described in Chapters 4 and 5 of the EIS.*

## **12. Comments Concerning Historic and Cultural Resources**

**Comment:** 10.3.1.9 Cultural Resources. There is no mention in this section of the many local recreational effects: the loss of most of Harris Lake Park to flooding, and the inundation of two historic mill sites. (0028-205 [Cullington, Liz])

**Comment:** While we were unable to attend the public scoping meeting, we have been contacted by members of your staff and will be meeting with them in mid-July to discuss potential effects of the proposed expansion on historic properties. (0032-1 [Sandbeck, Peter])

**Response:** *Impacts and mitigation measures to historic and cultural resources will be discussed in Chapters 4 and 5 of the EIS.*

## **13. Comments Concerning Environmental Justice**

**Comment:** 9.3.2.2.1.9 Environmental Justice. Table 9.3-5 Demographics for several counties surrounding the HAR site. Since no significant impacts to any human populations are expected to occur at the HAR site, there would not be significant disproportionate impacts on minority or low income populations... This is not correct. There would be significant health effects on customers of Harnett County water, both in Harnett County and other counties and municipalities that purchase water withdrawn from the Lillington intake on the Cape Fear. Because tritium cannot be filtered out of water, the only way to avoid drinking tritiated water piped to one's home is to purchase bottled water, or to install whole house filtration systems. Thus lower income residents would likely receive higher exposures. It is also seems hardly legitimate or even logical for PEC to argue that because there is an existing reactor environmental justice impacts would be SMALL. That's like saying they have already done or are doing all the harm that can be done, and that the immediate area is already so negatively impacted that two more reactors won't hurt. However, when it comes to the effect of radioactive pollution on the developing fetus three operating reactors are definitely worse than one. (0028-118 [Cullington, Liz])

**Comment:** 10.3.2.9.7 Environmental Justice This is a new argument about how there will be no disproportionately high or adverse impact on minority and low income populations as a result of the operation of the facility--because it will comply with federal state and local regulations!!!! If that were the case federal and state governments wouldn't have had to (reluctantly after pressure was applied and documentation aired)

institute consideration of environmental justice in siting facilities such as this. The fact is that siting 2 new reactors at the Harris site increases the concentrated exposure from routine operations and the concentrated risk of an accident, to an area of low to moderate income residents, including significant numbers of lower income and minority residents, to benefit the affluent living further away, developments of extremely large homes, unneeded overcooled and overlit shopping centers and so on. (0028-234 [Cullington, Liz])

**Response:** *Environmental justice analysis in a NRC EIS deals with disproportionate environmental impact on low-income and minority communities and includes socioeconomic impact. NRC staff will analyze socioeconomic impacts from both a regional and an environmental justice perspective in Chapters 4 and 5 of the EIS.*

#### **14. Comments Concerning Health – Nonradiological**

**Comment:** (p. 10-48) 10.3.1.7 Noise. PEC considers significant and prolonged noise from construction to only impact humans, even though it can have a far more significant impact on wildlife. (See Section 10.3.1.6) PE seems to think that wildlife will relocate to adjacent undeveloped land, however, there is no assurance that land PE doesn't own won't be timbered, or developed, if it hasn't been already, and construction noise will further disrupt adaptation of some species, most significantly woodpeckers, of which listed red cockaded woodpeckers are among those projected to lose habitat. That noise could apparently travel far beyond the area being cleared. (0028-203 [Cullington, Liz])

**Comment:** PE only mentions here that the construction schedule at times could span 24 hour days, up to 7 days a week so that traffic impacts could occur 6 times a day not just 2, and noise impacts could be 24/7 on both humans and wildlife. (0028-207 [Cullington, Liz])

**Comment:** (p. 10-56) 10.3.2.6 Noise. As stated in Section 5.8, there will be no physical noise impacts from operation of the HAR or appurtenant facilities outside of the ... 6-mi...radius of the vicinity." What about inside that radius? There are many residences, churches, and farms, inside that zone. (0028-222 [Cullington, Liz])

**Response:** *These comments refer to noise impacts, which will be addressed in Chapter 4 of the EIS.*

#### **15. Comments Concerning Health – Radiological**

**Comment:** [Y]ou would have to live by a nuclear power plant for more that 2000 years, yes, 2000 years to get the same amount of radiation exposure that you receive from a single diagnostic medical X-ray. (0001-122 [Hummel, Bill])

**Comment:** [Y]ou would have to live by a nuclear power plant for more that 2000 years to get the same amount of radiation exposure that you would receive from a single diagnostic medical X-ray. (0002-108 [Hummel, Bill])

**Comment:** (p.10-23) Monitoring is no protection against harm when it consists of samples taken once or even a few times a year. It can only document harm after it is done. (0028-167 [Cullington, Liz])

**Response:** *These comments refer to health impacts, which will be addressed in Chapters 4 and 5 of the EIS.*

**Comment:** I want the scope to include all of the population that could be affected by such a release of radioactivity. Cesium was the primary radioactive element that was looked at in his analysis. (0001-135 [McDowell, Mary])

**Comment:** (Page 10-7) Radiological: Unavoidable adverse radiological effects with the fuel cycle are insignificant in comparison to background radiation. No, actually they are not and are not comparable. Now that atmospheric testing of nuclear warheads has been stopped for many decades most background radiation is not inhaled, ingested, eaten or drunk. Most people near a nuclear plant or affected by its emissions through crops, game food, fish, water, milk, will all receive doses that are significantly different and more to the point, in addition to background radiation. Those individuals working at the plant, or being born to a mother who has worked at a nuclear plant or a father who has worked recently at a nuclear plant, can experience in the first case higher rates of cancer and in the second and third cases an elevated rate of birth defects and cancer. Once again it has to be pointed out that monitoring no matter how frequently done does not prevent discharge, but only measures it after the fact. (0028-148 [Cullington, Liz])

**Response:** *These comments refer to health impacts, which will be addressed in Chapters 4 and 5 of the EIS. Cumulative impacts will be discussed in Chapter 7 of the EIS.*

**Comment:** [T]he lack of a full scale and long-term operating prototype of the AP1000 reactor means that its lack of a containment dome and its passive air cooling features, mean that its radiological emissions can only be assumed in the absence of hard data to be way in excess of a conventional PWR. It seems virtually criminal for the NRC to set up procedures to unleash an entire wave of new reactors of this design onto the US public and our ecosystem without such a long term monitoring (as well as safety) record. This is particularly serious when in this case the reactors are to be sited in an area that PE admits has population density and density growth projections in excess of NRC requirements. (0028-149 [Cullington, Liz])

**Response:** *Emission estimates will be based on Federal regulations as documented in the approved AP-1000 Design Control Document; these emission estimates are anticipated to be conservative (that is, they will overestimate emissions). The approval process for the AP-1000 Design is outside the scope of the EIS. The human health and environmental impacts of the emissions will be addressed in Chapter 5 of the EIS.*

**Comment:** (page 10-14) Table 10.1-1 sheet 7 of 7. PEC cites the potential for radiation exposure to construction workers because they will be within the restricted area boundary, and potentially exposed to direct radiation and the radioactive effluents from ... routine operations. How about expanding the existing administrative controls and plant procedures for current plant workers to all these construction workers and loggers and whoever? Instead PEC mentions the 16 thermoluminescent dosimeter (TLD) fence line locations and says that this will be the basis for assessing worker exposure, which proves beyond a doubt that they will not be issuing TLDs to construction workers, and that individual exposures will be essentially unknown. PEC says incorrectly that for the majority of time during construction workers would be further away than the fence line,

which is not true for actual construction of the reactors and associated buildings. (0028-151 [Cullington, Liz])

**Response:** *These comments refer to radiation exposure to construction workers, which will be addressed in Chapter 4 of the EIS.*

**Comment:** PEC says it will collect aquatic vegetation, fish and sediments to detect the presence of any radioisotopes related to the operation of the HAR. What about waterfowl eggs? This is where radioactivity could concentrate, (0028-168 [Cullington, Liz])

**Response:** *Chapter 5 of the EIS will discuss the estimated radiation dose to a member of the public and to the biota inhabiting the area around the proposed two proposed Harris units (HAR-2 and HAR-3).*

**Comment:** (p.10-26) Radiological impact of operation & decommissioning = small (!!!!) no, LARGE. (0028-170 [Cullington, Liz])

**Response:** *Impacts from normal operation of the two new units will be discussed in Chapter 5, and cumulative impacts will be discussed in Chapter 7 of the EIS. Environmental impacts from decommissioning HAR-2 and HAR-3 will be discussed in Chapter 6 of the EIS.*

**Comment:** 10.3.1.11 Radiation. "The radiological environmental data indicate that HNP operations in 2004 had no significant impact on the environment or on public health and safety..." In twenty years of operation, is this the only year for which PE feels comfortable making this claim? In its earlier years, tritium build up in the lake was of significant concern and tritium is still discharged. (0028-214 [Cullington, Liz])

**Response:** *The comments concern emissions of tritium and health effects that may result from such emissions. Emission estimates will be based on Federal regulations as documented in the approved AP-1000 Design Control Document; these emission estimates are anticipated to be conservative (that is, to overestimate emissions). The NRC will evaluate human health and environmental impacts of the emissions in the EIS, and the results of this analysis will be presented in Chapter 5.*

**Comment:** (p. 10-61) Radiation Although PEC says that operation of the new reactors will not contaminate the HAR property or surrounding land are they willing to say the same for the air and more importantly, the lake and downstream river, and fish? (0028-237 [Cullington, Liz])

**Response:** *The NRC will evaluate human health and environmental impacts of the emissions in the EIS, and the results of this analysis will be presented in Chapter 5.*

## **16. Comments Concerning Accidents – Design Basis**

**Comment:** Chapter 7 & tables 7.2-6 and 7.1-2 are referenced to try to claim that site specific offsite exposures during the spectrum of design basis accidents is significantly below the NRC's guideline limits. and that the significant margin provided diminishes the relevance of the 500 ppsm guidance. But safety margin doesn't mean no risk. There seems some math deficiency in trying to argue that a postulated exposure x to more

people is not relevant. Particularly if there being more of those people means it is harder for them to evacuate so that their hypothetical exposure turns into a great deal more in real life. (0028-121 [Cullington, Liz])

**Response:** *The NRC staff will address design basis accidents in Chapter 5 of the EIS. For postulated design basis accidents, siting regulations require an exclusion area of such a size that an individual located for any 2-hour period at the exclusion area boundary would receive a dose that would be no more than 25 rem total dose equivalent. The NRC's use of the value of 25 rem does not imply that it considers it to be an acceptable limit for an emergency dose to the public under accident conditions, but only that it represents a reference value to be used for evaluating plant features and site characteristics intended to mitigate the radiological consequence of accidents and provide reasonable assurance of low risk to the public under postulated accidents.*

## **17. Comments Concerning the Uranium Fuel Cycle**

**Comment:** My assumption is that this site in Wake County may hold the highest concentration of irradiated spent fuel rods from commercial reactors in the United States. And it continues to grow. (0001-100 [Crandall, Van])

**Comment:** The prospect of having two new commercial reactors at this same site raises serious questions as to how large this high level accumulation of waste could actually encompass within say 20 years. (0001-101 [Crandall, Van])

**Comment:** If Progress Energy is at some point acquired by another electrical utility, also having commercial reactors, I shudder to think the potential accumulation of high level nuclear waste that could be earmarked for Wake County. (0001-102 [Crandall, Van])

**Comment:** If North Carolina electric utilities lead the nation in pioneering a new generation of commercial reactors, and in context of the economic and historical issues that I outlined earlier, it would only require a stroke of the Federal pen to make North Carolina the nation's nuclear waste commode. (0001-103 [Crandall, Van])

**Comment:** I really, really encourage Progress Energy to pursue dry cask storage. We have the largest waste pool in the United States. Dry cask storage is a very, very proven technology that can take the waste pool and ensure it without using any water, and ensure its safety. It will be a much better -- and again, I gave those comments about a year and a half ago, and I again encourage Progress Energy to take that direction of pursuing dry cask storage, because one, they'd be using a lot less water; two, they'd be ensuring the safety of the waste pool that's already there. (0001-116 [Gilbert, Bob])

**Comment:** [T]he way the fuel rods are stored at the Harris Plant, the way they're allowed to be stored by the Nuclear Regulatory Commission, because there was no alternative long-term storage, they allowed them to put the rods closer and closer together. (0001-132 [McDowell, Mary])

**Comment:** If we build two more plants there, we are going to have three times as much high level waste. So the fuel pools and risks to the population of perhaps half of the

state of North Carolina, and that needs to be considered in the scoping. (0001-136 [McDowell, Mary])

**Comment:** The nuclear waste itself, the high level nuclear waste, the spent fuel that they call it at Shearon Harris, it's a permanent risk factor in my opinion. (0001-48 [Warren, Jim])

**Comment:** [I]t's very likely that the Yucca Mountain project in the west will never open. Even if it does, Harris will be storing high level nuclear waste in these high density cooling pools, which the National Academy of Sciences in 2005 confirmed is the most dangerous way possible to store this waste. (0001-49 [Warren, Jim])

**Comment:** [O]ne thing that I'm concerned about is that I have seen in early review of this thousands of pages of application, that it appears that Progress Energy, at least based on Westinghouse's design, intends to store the additional nuclear waste, because they're proposing to build two more pools. They've already got the largest cooling pools in the nation right here at Shearon Harris. And it appears that they intend to store the spent fuel from the new reactors in high density in defiance of what the National Academy of Sciences warned of in 2005. (0001-50 [Warren, Jim])

**Comment:** Where will you put the waste? There will be low level radioactive waste and high level waste which we call the spent fuel rods. (0001-62 [Smith, Jane])

**Comment:** Low level waste may still be trucked to South Carolina, but what is the end time for that disposal facility? There is no other storage/disposal for low level radioactive waste that I know of. (0001-63 [Smith, Jane])

**Comment:** Yucca Mountain can not be seriously considered as a repository for high level waste. It has been rejected over many years. Now there is a date, a target date of 2017. But it seems highly unlikely that will ever come to pass. So we have spent fuel rods stored on site for decades or forever. (0001-64 [Smith, Jane])

**Comment:** At the present time Shearon Harris is the largest site for the storage of high level nuclear waste in the United States. For many years the waste from the Brunswick Plant near Southport and the waste from the Robinson Plant in South Carolina has been sent by train through Sanford for storage pools at the Shearon Harris Plant. Today you are planning for more nuclear reactors, and you have no plan for your dangerous trash. Will you store high level spent fuel rods in water for five years? Then will you place them in steel and concrete casks for 10,000 years? And I am sure that you all know that power plants have not been licensed for long-time storage. (0001-65 [Smith, Jane])

**Comment:** We need, in fact we really demand, a long-term solution for nuclear waste. (0001-68 [Smith, Jane])

**Comment:** The lack of any long-term disposal of irradiated fuel. Since about 1984 there has been a waste confidence that, it's sort of like, let's all hope by sometime in the future we are going to be able to take care of our irradiated fuel. That hasn't happened. There is no long-term disposal. So we are going to add the irradiated fuel from two more reactors into something that we don't know. This sort of faith based taking care of a problem just is not going to be worthwhile. So the EIS needs to look at where this irradiated fuel is going to go. (0001-91 [Runkle, John D.])

**Comment:** Also look at the storing of the irradiated fuel in the fuel cells. This is an accident waiting to happen. It is going to be one of the major ways that radiation gets out into the environment and affects the public, and we need to know all the different ways that could happen, the different risks associated with this. And how the risk of the two new power plants is added on to the present one. (0001-92 [Runkle, John D.]

**Comment:** In context with this back drop of economic uncertainty and risk is the question of what to do with nuclear waste. Both high level waste in the form of irradiated spent fuel rods and long live radioactive waste that's classified as low level. Permanently isolating or disposing the waste from the biosphere is not possible. It can only be stored. It's common knowledge Progress Energy stores irradiated spent fuel rods in cooling pools at the Shearon Harris Plant. Progress Energy also imports the same waste to Wake County from other commercial reactors. (0001-99 [Crandall, Van])

**Comment:** Even if two new reactors in Wake County were actually part of a solution to global warming, ... the problem of the long-lived waste, the global shortage of uranium and its increasing price (0002-63 [Cullington, Liz])

**Comment:** The EIS should clearly evaluate whether and in what time frame irradiated fuel generated by the proposed units can be safely disposed. Nationwide, there is a decided lack of options for permanent disposal of irradiated fuel and other high-level radioactive waste. It is unreasonable at this late date to continue to rely on the Final Waste Confidence Decision, 49 F.R. 34,658 (August 31, 1984), citing State of Minnesota v. NRC, 602 F.2d 412 (D.C. Cir. 1979) or the Waste Confidence Decision Review: Status, 64 F.R. 68,005 (December 6, 1999). (0005-20 [Runkle, John D.]

**Comment:** To date, the NRC still has not made an assessment on the safe disposal of waste on which Progress Energy can rely. Additional waste generated by the two proposed reactors will not safely take care of itself; let's hope that the waste will be taken care does not meet the requirements of NEPA. (0005-21 [Runkle, John D.]

**Comment:** The EIS should carefully describe and analyze the plans to store the irradiated fuel in fuel pools on the site. There could be considerably more radioactive material released from improper storage and loss of water from the pools and the off-site results could be catastrophic. (0005-22 [Runkle, John D.]

**Comment:** Nuclear waste is a permanent risk. Pro-industry NRC Commissioner Ed McGaffigan admitted in 2007 that the proposed Yucca Mountain dump is very unlikely ever to open. Even if it did, highly radioactive fuel rods will be stored at Shearon Harris and other plants for decades in the most dangerous way possible: high density cooling pools. Harris has the largest nuclear waste pools in the U.S. (0008-7 [Turk, Lawrence "Butch"])

**Comment:** The DOE is responsible for storing nuclear waste. At the very least, it seems reasonable that there will have to be a small team of people monitoring and guarding nuclear waste to make sure it is safely kept. It also seems reasonable to assume that the more waste we generate, the more people will need to watch it, since some predict we'll fill up the proposed Yucca Mountain facility and need to find another place to bury high-level waste. (0010-32 [Keto, Evan])

**Comment:** Where will the non-radioactive and low-level radioactive waste from this project be stored? How many loads of waste per year will be generated, and how much fuel is turned into pollution by these trucks? How does this compare to the alternatives? How many tons of resources, like paper, rubber gloves, tools, and glassware will be converted into waste over the lifetime of these two facilities? What is the estimated value of these resources, and how does this compare to the alternatives? Of these resources, what percent are consumed? Turned to waste? Recycled? (0010-34 [Keto, Evan])

**Comment:** What I am suggesting is that the power company get rid of all the waste that they have now before they start collectiong any more. It seems like this area gets all the trash that no one else wants to deal with and we want to be left alone. (0016-2 [Cross, Wayne])

**Comment:** Nor does it serve the public interest or health to ensure the creation of yet more tons of highly irradiated and long-lived waste. (0022-17 [Bonitz, John] [Cullington, Liz] [Dukes, Patty] [Eads, Don] [Ellison, Margie] [King, Ed] [Meyer, Nick] [Royal, Lil] [Schwankl, Audrey] [Schwankl, Jimmy])

**Comment:** There is no current answer to the problem of how to safely store the radioactive waste these plants will produce, in addition to the large amount of waste being stored on site at the existing Shearon Harris facility. This problem exceeds any other consideration concerning this proposal and must be answered before any further review takes place. (0023-10 [Chiosso, Elaine])

**Comment:** About 20 years ago there was a request for a license to establish a district nuclear waste storage facility near our Shearon Harris plant. Even though this location didn't meet the qualifications for a district storage, Progress Energy has been shipping spent nuclear rods from its other nuclear plants to our plant for storage. Now they are a merged company that extends all the way into Florida. This new area has nuclear plants also, and we are told that they are applying for two new plants there. We are also told that our Harris plant has the largest nuclear rod storage pool in the U.S. Will we who have lived here for over 80 years have the extra anxiety of what is equivalent to an unapproved regional storage in our back yards? We think that those who live near a nuclear plant should not have to be concerned with both nuclear plants and unspent rods or waste at the same time. (0025-2 [Womble, Wallace and Pansy])

**Comment:** Even though we would rather not have them we do not oppose the nuclear plants if they will store their spent rods and waste some place else. (0025-4 [Womble, Wallace and Pansy])

**Comment:** If there is no reprocessing, there would be a need for isolation for thousands to tens of thousands of years. PEC did not quantify the impacts of reprocessing correctly, because it failed to account for the reprocessing waste. PEC also does not account for transportation (fossil fuel use, air impacts, costs) either to and from reprocessing site, or to a temporary or permanent repository. (0028-182 [Cullington, Liz])

**Comment:** Table 10.2-2 Fuel Cycle. PEC relies on an old GEIS for license renewal for its fuel cycle data (NUREG-1437). This GEIS was not supposed (nor could) it anticipate conditions 80 years into the future. (0028-194 [Cullington, Liz])



**Comment:** WHEREAS, the Shearon Harris nuclear power plant already has the largest quantity of pool-stored spent nuclear fuel rods in the United States. (0031-1 [Jacobs, Barry])

**Comment:** WHEREAS, The permanent storage facility for spent nuclear fuel rods and other high level radioactive waste at the proposed federal Yucca Mountain facility in Nevada appears to be no closer to fruition than it was twenty years ago and will probably not be available for another twenty years, if ever. (0031-7 [Jacobs, Barry])

**Response:** *The impact of the uranium fuel cycle, including disposal of low-level radioactive waste and spent fuel, will be considered in Chapter 6 of the EIS. The generic impacts of the fuel cycle are codified in 10 CFR 51.51(b), Table S-3, "Table of Uranium Fuel Cycle Environmental Data." Per the guidance in 10 CFR 51.51 and Section 5.7 of NUREG-1555 (NRC 2000), the NRC staff will rely on Table S-3 as a basis for the impact of uranium fuel-cycle impacts.*

**Comment:** (p. 10-35) 10.2.1.8 Destruction of Geological Resources during Uranium mining and Fuel Cycle PEC blithely mentions the pollution of surrounding soil. Impacts to surrounding lakes, streams and groundwater.... from uranium mining, yet fails to include these in its summary of impacts from two proposed new reactors, and does not include them in its comparison of impacts from the various alternatives considered. Data used for this ER on the impacts of uranium mining are for the readily available, easy to mine, and higher concentrated ore which is in insufficient supply for the anticipated 60 year operational life of HAR-2 and HAR-3. Future demand for uranium could increase all the impacts of uranium mining. (0028-183 [Cullington, Liz])

**Comment:** 10.2.2.3 Uranium Fuel and Energy Consumption. A study of available uranium by the World Nuclear Association projects the availability of a 50-year supply of low-cost uranium. (Reference 10.2-002) For how many reactors? And is low-cost current cost? The "study" also projects that increased market prices will drive additional exploration and could result in a tenfold increase in available uranium. So it appears that you can have low cost or availability but not both. Firstly, this is not a "study" which implies academic rigor, sourcing, peer review, the scientific method, and one hopes an absence of polemic. Instead this is merely an undated web page, with no authors, no footnotes, and no scientific credibility. (The month that appears on this web page is the month that you are accessing it.) World Nuclear Association, Supply of Uranium, [www.world-nuclear.org/info/inf75.html](http://www.world-nuclear.org/info/inf75.html) However, WNA is including uranium found in most rocks and sea water. This has been shown to be neither practically nor economically feasible, and is not what the typical reader expects uranium supply to mean, which is accessible high-grade ore. In addition this entire effort appears to be mere polemic and obfuscation: From time to time concerns are raised that the known resources might be insufficient when judged as a multiple of present rate of use. But this is the Limits to Growth fallacy, a major intellectual blunder recycled from the 1970s, which takes no account of the very limited nature of the knowledge we have at any time of what is actually in the Earth's crust. The amount of money being spent on uranium exploration is a function of its increase in price, which is an indication of its scarcity, not its abundance, and funds spent on exploration are not an indication of increase in total available resource. Increasing funds spent on oil exploration have not produced an increased supply. for just one example: see here:

<http://www.commondreams.org/archive/2008/06/28/9943/> Foreign Policy in Focus, June 28, 2008 Another dubious assumption is that extracting uranium from coal ash would

provide a future source of fuel. For one thing, it's not likely that we will be here if we continue to burn coal. Secondly, there is no mention of the energy required to develop fuel from all these low-grade sources, which would be far in excess of the eventual output. The appendix (article) implies that the price of uranium has consistently declined by citing a late 1970s price of \$40/lb, even though prices have risen significantly since that time. Another bizarre assumption is the one that regards the earth's crust as having no value in sustaining life (rotation of the earth, protection against volcanic eruptions and goodness knows what) other than short-term exploitation for monetary profit: (0028-187 [Cullington, Liz])

**Comment:** There is no comparison of uranium (or other fuels) to energy that does not require a constant supply of fuel. All estimates that there is a 60-70 year supply of uranium are reserves-to-production ratios (current reserves divided by current annual production), not future demand. But currently of the 65,000 tonnes of total demand, 10,000 comes from military stockpiles, 15,000 from varied sources, and only 40,000 from mines, the only predictable future source. Thus there is a current deficit, which will only get worse as more reactors are built. There is also no acknowledgment here that some (if not most) areas with significant uranium reserves and/or production are also those either at risk of drought or experiencing it, and uranium mining takes large amounts of water. (0028-188 [Cullington, Liz])

**Comment:** Uranium mining: In addition, PE has failed to glance over at the sites where that uranium and those metals have been mined, where soil, streams, and lakes and areas downwind have been left contaminated for all foreseeable time. It has been noted that proper remediation of uranium mining sites would price the fuel beyond use for many power customers. If remediation costs and operations are not built into mining and use then one cannot assume that future dollars would be available to go back and clean up the problem. (0028-192 [Cullington, Liz])

**Response:** *These comments discuss the available uranium-ore supply and associated potential impact on the viability of the nuclear industry and are outside the scope of the environmental review. These comments will not be evaluated in the EIS.*

**Comment:** Eventually the United States will follow France Japan, England and other places and will recycle used fuel to extract the energy there and place the remaining unusable end product in a repository at Yucca Mountain, Nev. (0011-8 [Modeen, Jessica])

**Response:** *This comment expresses general support for the practices of waste management and is outside the scope of the EIS. It will not be considered further.*

**Comment:** -Used fuel is not a threat to the public. Under an integrated management approach, used nuclear fuel will remain safely stored at nuclear power plants until being moved to consolidated interim storage facilities. (0011-7 [Modeen, Jessica])

**Response:** *The impact of the uranium fuel cycle, including disposal of low-level radioactive waste and spent fuel, will be considered in Chapter 6 of the EIS. The generic impacts of the fuel cycle are codified in 10 CFR 51.51(b), Table S-3, "Table of Uranium Fuel Cycle Environmental Data." Per the guidance in 10 CFR 51.51 and Section 5.7 of NUREG-1555 (NRC 2000), the NRC staff will rely on Table S-3 as a basis for the impact of uranium fuel-cycle impacts. Regarding interim storage facilities, that is*

out of the scope of the EIS, which is concerned with the potential environmental effects of construction and operation of the proposed two new Harris units (HAR-2 and HAR-3).

## **18. Comments Concerning Transportation**

**Comment:** Train lines to the plant currently utilize some crossings without gates where locals are used to zero train traffic. This is a significant safety issue, and PEC must be required to specify whether large shipments would come by rail or road, and what they plan to do to ensure public safety in both cases. (0028-208 [Cullington, Liz])

**Response:** *Detailed information about specific rail crossings will not be addressed in the EIS. Compliance is anticipated with applicable rules and regulations about warning equipment at rail and highway crossings. The EIS will evaluate the radiological impacts of transporting fuel and waste to and from the proposed Harris Nuclear Plant (HNP) site and alternative sites. The impacts will be calculated for truck shipments of fuel and waste to and from the sites because the impacts of truck shipping bounds the impacts of transporting these materials. The EIS will also include an analysis of the nonradiological impacts of transporting construction personnel and materials, operating personnel, and fuel and waste to and from the proposed HNP site and alternative sites.*

## **19. Comments Concerning Decommissioning**

**Comment:** It seems to me that if the economy slumps and fuel prices skyrocket over the next 40 years, it will be very expensive to run the bulldozers and cranes needed to safely decommission these new plants when their life expires. What are the total projected costs of decommissioning this site if the plants operate for 40 years, and fuel prices continue to increase at current rates? How do they compare on a per-megawatt basis with decommissioning other technologies? What is the likelihood that it might be so expensive to remove these two plants that they stay where they are until they fall down from age? How much would fully decommissioning these facilities add to the per kwh cost of electricity? How does this compare to the alternatives? (0010-31 [Keto, Evan])

**Response:** *The NRC staff will evaluate decommissioning in Chapter 6 of the EIS. In addition, Supplement 1 to NUREG-0586, Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities (2002) may provide information on expected impacts from decommissioning. Regarding the comparison of decommissioning of other technologies, this is out of the scope of the environmental review, which is concerned with the potential environmental effects of construction and operation of the proposed two new units at the Harris site.*

## **20. Comments Concerning Cumulative Impacts**

**Comment:** Secondary and cumulative impacts should be addressed within the ER and the ensuing EIS since a portion of the need for this proposal is to accommodate growth within the area. In addition, any ties to the Western Wake Regional Wastewater Treatment Facility proposal, currently undergoing a federal EIS, should be discussed and disclosed. (0033-7 [Manuele, Jean B.]

**Response:** *The NRC received official notice of the U.S. Army Corps of Engineers' interest in becoming a cooperating agency for the Shearon Harris COL EIS. The NRC has agreed by letter dated September 19, 2008 [ADAMS Accession Number ML0825206649] to invite the U.S. Army Corps of Engineers to serve as a cooperating agency in the preparation of the EIS for this licensing action. The cumulative impact associated with the construction and operation of the proposed nuclear power plants will be evaluated, and the results of this analysis will be presented in the EIS.*

## **21. Comments Concerning Related Federal Projects**

**Comment:** Appropriate federal and State agencies, such as the US Army Corps of Engineers and the NCDENR Division of Water Resources (DWR) should be consulted for this evaluation; DWR has developed the Cape Fear River Hydrologic Model which should be used for hydrologic evaluations. (0021-3 [Gauss, Tim])

**Comment:** The US Army Corps of Engineers and the NCDENR Division of Water Resources (DWR) should be consulted for this evaluation; DWR has developed the Cape Fear River Hydrologic Model which should be used for hydrologic evaluations. (0026-2 [Brown, Stephen J.]

**Response:** *The NRC consulted with a variety of Federal and State agencies during the environmental review. Agencies with which NRC consulted include the U.S. Army Corps of Engineers and the North Carolina Department of Environmental and Natural Resources Division of Water Resources. Surface water and groundwater impacts will be addressed in Chapters 4 and 5 of the EIS.*

## **22. Comments Concerning the Need for Power**

**Comment:** Electricity is a core infrastructure that we need to have, not only for Wake County, but the rest of North Carolina and in the southeast. Along with being good stewards and conserving, it also means generating new capacity, which should include nuclear power plants. (0001-11 [Bryan, Joe])

**Comment:** [N]uclear already provides 20 percent of the United States' electricity, and with electricity demands expected to increase by 25 percent nationally by 2030, the United States needs more nuclear energy if it wants to keep up with our growing energy needs. (0001-117 [Hummel, Bill])

**Comment:** We are actually using 50 percent more electricity today than we did years ago. Progress Energy must be ready, in fact we are obligated to serve. We must serve the electricity that our citizens need, and we must provide a safe, reliable, economic, and environmentally sound energy source for you. (0001-18 [Pinnix-Ragland, Hilda])

**Comment:** Even with significant energy efficiency and renewables, we still need additional base load generation. (0001-20 [Pinnix-Ragland, Hilda])

**Comment:** [T]here is clear need of base line clean power generation in our area. Lee County in the central region of North Carolina is growing rapidly, very rapidly. And to me it is clear that this base line capacity needs to be increased (0001-30 [Griffin, Eric])

**Comment:** A key to our growth and the sustainability has been our ability to have an adequate supply of quality power, and the ability to meet our growing electrical needs is critical. (0001-70 [Winters, Mike])

**Comment:** [E]lectricity is absolutely vital to our infrastructure. ...The last thing a business wants to hear is, sorry, you need to shut down today because we are just not going to be able to provide you with any electricity. (0001-75 [Herts, Bob])

**Comment:** Our citizenry has grown exponentially and will grow. And to the heart of that is, if we are going to continue to grow, we have to have an infrastructure that grows with us. And at the heart of that, of course, is power. (0002-1 [Goodwin, David L.])

**Comment:** U.S. Department of Energy estimates that our electricity demand will increase 25 percent by 2030. As technology advances, our economy expands, and our population increases, our need for energy will grow. (0002-104 [Cann-Woode, Nina])

**Comment:** Progress Energy has an obligation to meet the growing needs of the service area by providing reliable and affordable electricity for many years to come. (0002-13 [Sauls, James])

**Comment:** The energy needs in North Carolina's electric cooperatives are tracking the significant growth of our state in the digital age. While all utilities are reviewing alternative fuel resources and implementing energy efficiency and conservation programs, we will need base load generation in the next ten years. (0002-20 [Ragsdale, Lee])

**Comment:** In addition, our homes are larger than they were many years ago, and we use almost 50 percent more electricity than 30 years ago. So we must be ready to meet the needs of our community, making sure that we provide safe, reliable, economic, and environmentally sound energy. (0002-28 [Pinnix-Ragland, Hilda])

**Comment:** I believe that it's strategically important that we add to base load capacity in the state in a timely fashion to sustain orderly healthy growth. (0002-44 [Fain, Jim])

**Comment:** Raleigh and Wake County is growing tremendously. Wake County alone has added on average 107 net new residents/day over the past year (according the Census Bureau). This growth isn't limited just to our county. As a state, North Carolina is currently the 10th largest state in the country, with projections that we'll move to 7th by 2020. As such, it is imperative that we have a safe, steady and reliable power supply as our region continues to grow. (0009-2 [Moretz, Drew])

**Comment:** As a nation, the U.S. Department of Energy projects that U.S. electricity demand will rise 25 percent by 2030. That means our nation will need hundreds of new power plants to provide electricity for our homes and continued economic growth. (0011-3 [Modeen, Jessica])

**Comment:** We here at Raleigh, Durham and Chapel Hill are full steam ahead in population growth and bursting at the seams. (0014-1 [Susann, Marian])

**Comment:** I also feel that electrical capacity must be increased to ensure the uninterrupted supply for our future. (0017-4 [Smelcer, Donald])

**Comment:** WHEREAS, the expansion of Harris would ensure Progress Energy can continue to provide the electricity needed for the growing Triangle region; and WHEREAS, Progress Energy expects to add 500,000 new customers by 2026; and WHEREAS, electricity is a vital part of our state's infrastructure. Infrastructure that serves as a magnet for businesses and economic development. (0030-1 [Bryan, Joe])

**Response:** *The comments are noted. The comments express general support for additions to new electric generating capacity in the Carolinas such as the proposed Harris Nuclear Station Units 2 and 3. However, they provide no new information and, therefore, will not be evaluated further.*

**Comment:** Our nation is addicted to electricity and that addiction will only grow in the future. U.S. Department of Energy estimates that our electricity demand will increase 25 percent by 2030. As technology advances, our economy expands, and our population increases, our need for energy will grow. Considered that today all renewable sources produce two percent of our electricity, while nuclear power accounts for 20 percent, that's one out of every five homes and businesses in the United States. And here in North Carolina, nuclear power provides over a third of the state's energy needs. (001-106 [Cann-Woode, Nina])

**Comment:** Consider the facts, nuclear energy is clean. It is the only large scale emissions resource of electricity that we can readily expand to meet our growing energy demand. We all have a shared stake in America's energy future. Now is the time for our country to support nuclear energy as a means to generate electricity with a clean, safe and dependable source of power. (0001-108 [Cann-Woode, Nina])

**Comment:** On average, the Carolinas are adding an additional 25,000 new homes and businesses each year, and are expected to add a half a million new customers by the year 2026. In order to plan for this expected growth, we must be able to provide affordable and reliable electricity. (0001-78 [Rupprecht, Diane])

**Comment:** Currently in its Carolina service area, Progress Energy serves 1.4 million customers. And it is adding an average of 25,000 to 30,000 new homes and businesses per year. Thus by 2026, Progress Energy expects to add 500,000 new customers to its current base. That will put the total customer base at almost two million homes and businesses by 2026. Currently, the Harris facility itself supplies power to more than 550,000 residents and businesses. (0002-14 [Craig, Lee])

**Comment:** We are growing. Over one hundred people move to Wake County every day, and that is a good thing. Now with the growth we need to provide electricity, and we're obligated to serve. We want to make sure we provide the electricity that our customers need. Thus, by 2026 or 30 years from now, an additional 500,000 new customers, which is good. (0002-27 [Pinnix-Ragland, Hilda])

**Comment:** Our five year projection for growth in general office space is 5.3 million square feet. Our research component of the office is about 1.7 million square feet. Our percentage share of that over a five year period is another 265,000 square feet in RTP on top of the 24 and a half million square feet that already exists in RTP. The research part of that is another 500,000 square feet of R&D space in the next five years. (0002-35 [Johnson, Kevin])

**Comment:** And in a growing jurisdiction, and you've heard a number of statistics on the growth. In a growing jurisdiction, economic opportunity depends on adequate base load capacity, and that's particularly an important issue in our state, which has been growing rapidly. (0002-41 [Fain, Jim])

**Comment:** Clearly, the availability of reliable and affordable power has supported our growth, as has, no doubt, initiatives such as our clean smoke stacks legislation which has encouraged investment in scrubbing equipment. (0002-43 [Fain, Jim])

**Response:** *The comments generally state that as populations and electricity demand grows, so will the need for reliable sources of power. The need for power will be addressed in Chapter 8 of the EIS in an analysis that is (1) systematic, (2) comprehensive, (3) subject to confirmation, and (4) responsive to forecasting uncertainty.*

**Comment:** [N]ew nuclear power plants are not needed...there is a large surplus of electricity capacity in the southeast for many, many years to come. And that does not even account for any advances in energy efficiency. (0001-52 [Warren, Jim])

**Comment:** There are 60 power plants [in the Southeast] that could be used to produce all of this energy that we need to support economic growth and that are not being fully exploited at this time because they want these nuclear power plants to be built so that we can possibly sell to maybe somewhere else, right. I don't believe the plants are necessary. (0002-92 [Schwankl, Audrey])

**Comment:** My first concern is for the need for this additional power. Without a clear need for additional electricity, it does not make sense to spend billions of dollars to create the new facilities. (0010-2 [Keto, Evan])

**Comment:** Therefore, I ask the NRC to carefully evaluate the demand for electricity under a range of possible economic scenarios, including a negative growth rate, and under a range of prices per kwh. If raising electricity prices by a few cents per kwh lowers demand and stimulates development of renewable energy, then it makes sense to take thus action rather than building two new plants, which will also raise prices, but leave us with excess supply that harms small businesses in the energy field. (0010-5 [Keto, Evan])

**Comment:** WHEREAS, numerous technical reports and papers by environmental groups, the utilities themselves and the NRC have shown that additional power generation capacity in this region may be unnecessary for the foreseeable future. (0031-9 [Jacobs, Barry])

**Response:** *Affected states or regions may prepare a need for power evaluation and assessment of the regional power system for planning or regulatory purposes. A need for power analysis may also be prepared by a regulated utility and submitted to a regulatory authority such as a State public utility commission. However, the data may be supplemented by information from other sources. The determination for the need for power is not under NRC's regulatory purview. The NRC staff will review the need for power and determine if it is (1) systematic, (2) comprehensive, (3) subject to confirmation, and (4) responsive to forecasting uncertainty. If the need for power*

*evaluation is found to be acceptable, no additional independent review by the NRC is needed.*

**Comment:** Progress Energy is arguing based on NRC regulations that if our local North Carolina Utilities Commission has indicated that Progress Energy may need additional base load power in the future, then Progress Energy does need additional base load power, and nuclear is preferable. However, the data provided to both the state and the Nuclear Regulatory Commission is all peaking demand data, not base load data. Base load demand is the 24-hour always-on demand for power. (0002-71 [Cullington, Liz])

**Comment:** In the COL application, Progress Energy states "The filed forecast represents a retail growth rate of approximately 1.8 percent across the forecast period before subtracting for DSM." (p. 8-16). Since many economists are predicting economic decline, and increased inflation, why would we assume retail growth? In a receding economy, wouldn't prudent businesses rather cut costs by increasing their own energy efficiency or by generating their own power, rather than buying more nuclear energy? What happens if it turns out this is an overestimate, and we only need 500 additional megawatts of electricity? Then Progress and the Federal government will have spent millions or billions of dollars on a project that can't pay for itself, and Progress will be forced to charge all of us more for electricity to keep from going bankrupt. Wouldn't it be best to hedge our bets and only build one plant first, and see if the predicted demand actually shows up before building the second? (0010-3 [Keto, Evan])

**Comment:** Section 8.2.2 (p. 26) Growth forecasted to be 2% a year before deducting for DSM (retail drops to 1.15 annual). For a home with peak demand of 3 KW that's equal to putting in one CFL (34.5w) or if 6 kW putting in 2 of them, per year. PE currently serves 1.4 million customers in NC and SC and expects 1.9 million by 2026. (This represents some vague addition across all classes of customer of 36%) This magically works out to 2%. Unstated is where the water is to come from another half a million customers (0028-51 [Cullington, Liz])

**Comment:** Section 8.2.2.2 Energy Efficiency and Substitution PE claims that embedded in its forecast are programs including aggressive customer education home energy checks financial incentives, rate incentives and commercial reduction strategies. Which is to say more of the relative nothing they have been doing up to now. And yet PEC also states, In June 2007, PEC announced a goal of displacing 2000 MW of power generation through DSM and energy efficiency programs. However, this 2000 MW has been stirred into the pudding and has vanished. Plus, PE now says it only has to save half that because its already saving 1000 MW! What a swindle! (But) the displacement of an additional 1000 MW through DSM measures does not eliminate the need for additional future baseload generation.(p.27) Which is funny math. Of course the need for power that is not demonstrated in Chapter 8, is the need for baseload rather than intermittent or seasonal peaking power. Using the find word feature baseload to follow the argument through this environmental report one finds very slim justification, (a) some expert testimony from NCUC IRP hearings saying new baseload might be needed, (b) rising cost of natural gas which is only used by PEC for peaking power needs, (c) need to diversify (but with so much of PEC's generation already coming from coal and nuclear how it is diversifying, to build more nuclear plants? (d) other irrelevant considerations such as greenhouse gases which is meaningless if coal plants are to continue to operate (and Chapter 9 indicates they plan to build 2 more. (0028-54 [Cullington, Liz])



**Comment:** (Page 8-35) Section 8.4.2: Cost-Benefit Summary PEC tries to argue that the existence of NC & SC IRP review is adequate for eliminating the need for additional NRC review. But NRC review has not included the determination of the need or advisability of a new baseload nuclear plant, or two. PE want the NRC to believe that NCUC has concluded new baseload is needed and NUREG-1555 allows this great weight. However, this is backwards to how NCUC works and what they found. In looking forward, NCUC simply couldn't eliminate the need for new baseload plants in future. The actual need for power, and the real costs and benefits are not looked at until a utility requests a certificate of public need and necessity. In the past and relatively recently demand forecasts by both Duke Power and Progress Energy have been wildly wrong and typically adjusted to demonstrate the supposed need for new plants (or not). For instance, the real boom in the Raleigh and RTP area occurred right before and after the completion of the Harris plant, and may well have leveled off, yet during all those years Progress Energy never projected the need for a new baseload plant, and didn't do until now when new reactor designs and streamlined licensing procedures (and federal subsidies) have all fallen into place. (0028-60 [Cullington, Liz])

**Response:** *Affected states or regions may prepare a need for power evaluation and assessment of the regional power system for planning or regulatory purposes. A need for power analysis may also be prepared by a regulated utility and submitted to a regulatory authority such as a State public utility commission. The applicant's need for power assessment, as provided in their Integrated Resource Plan, was reviewed and accepted by the respective State public utility commission. The determination for the need for power is not under NRC's regulatory purview. When another agency has the regulatory authority over an issue, NRC defers to that agency's decision. The underlying need for power analysis is defined by the various operational and investment objectives of the applicant that may be dictated or strongly influenced by State regulatory requirements or State energy policy and programs or, in special circumstances, by Federal agencies such as the Federal Energy Regulatory Commission. These various entities may place different emphasis on lower energy costs, increased efficiency of energy production, and reliability in generation, in addition to considerations such as distribution of electric power, improved fuel diversity, and environmental objectives such as improved air quality and minimization of land use. The NRC staff's role in evaluating the need for power analysis is to determine, specifically, if the analysis is (1) systematic, (2) comprehensive, (3) subject to confirmation, and (4) responsive to forecasting uncertainty. If the need for power evaluation is found to be acceptable, no additional independent review by the NRC is needed. Alternatives to the proposed project will be evaluated, and the NRC will examine a range of alternatives that will include a net reduction in electricity generation with no replacement power, demand-side management and energy conservation, electricity generated from other sources, and some combination of these alternatives. The need for power evaluation will be discussed in Chapter 8, and the energy alternatives will be discussed in Chapter 9 of the EIS.*

**Comment:** The last of North Carolina's industries are shutting up -- manufacturing industries are shutting up shop, and indeed the planning data filed by our utilities show a dramatic drop in industrial demand. Recently the credit crunch has pushed many national retail chains into filing for bankruptcy protection. So base load demand is more likely to drop in our region overall rather than increase. We are not just talking about

Research Triangle Park. We are talking about overall demand in the North Carolina and South Carolina service area for Progress Energy. (0002-72 [Cullington, Liz])

**Comment:** With fewer jobs in that area overall, we may still see more retirees moving for instance to North Carolina, but only to the limits of our water supply, which is already stretched to the limit in drought years, and residential customers tend to only increase intermittent peaking demand. (0002-73 [Cullington, Liz])

**Comment:** Nuclear power plants must operate around the clock except when shutdown for refueling. It is very dangerous to keep starting them up and shutting them down to meet intermittent demand. They do, however, shutdown unexpectedly which makes them less than a 100 percent reliable source of power for base load. So a large centralized nuclear plant requires more backup plants than would more smaller, more varied renewable sources. Or just other smaller plants. (0002-74 [Cullington, Liz])

**Comment:** We further believe that Progress Energy has not demonstrated the need for an additional 2000 MWe of baseload generation, as they have only provided peaking data. The North Carolina Utilities Commission has not ruled that 2000 MWe is needed to be constructed, and Progress Energy has not filed data with them on their baseload, rather than peaking demand. (0022-14 [Bonitz, John] [Cullington, Liz] [Dukes, Patty] [Eads, Don] [Ellison, Margie] [King, Ed] [Meyer, Nick] [Royal, Lil] [Schwankl, Audrey] [Schwankl, Jimmy])

**Comment:** PE curiously states that there is a growing baseload demand and growing baseload supply shortfall in the region of interest. This first statement is not fully demonstrated in Chapter 8, and the second one is nowhere else asserted or demonstrated. (0028-246 [Cullington, Liz])

**Comment:** Page 8-17 Screening of Generation Alternatives. There's no standard for reserve margin, says PEC. However, the larger the MW of a single unit, the larger the margin needs to be for when it is idle. In a distributed generation model, the margin can be less, and so would be the environmental impact. (0028-50 [Cullington, Liz])

**Comment:** 8.2.2 Factors affecting growth and demand. PE claims adding 25,000 to 30,000 new homes annually. But this is old data, and unlikely true now or in immediate future. Many homebuilders are going into bankruptcy or foreclosure in the area. Further growth in the region is not assured to match past growth, as companies now continue to shrink and lay off workers. One exception is the Fort Bragg expansion but as with all relocations, these relocated military personnel and their families (and civilian employees) will be leaving their power supply behind, purchase from which would likely be cheaper for ratepayers than two new reactors. This the only guaranteed increase in population in PE's service area either in NC or SC. According to the Sandhills Business Times July 2008 (for example) the Base Realignment and Closure (BRAC) expansion in the Fayetteville area will add 40,800 new residents to the region by 2013. Some of these new residents are anticipated to be living in adjacent Tier 1 counties. Of course two new reactors would be too slow a baseload solution for that growth. Although other, cleaner alternatives could be brought online faster, and more cheaply. Larger homes and more appliances and electronics mean that there is a greater reliance on electricity for homes and businesses. But local builders report that buyers want energy efficient homes and are responding to that demand. In addition to higher gas prices, PEC's customers may soon be paying all or part of a requested 16% rate increase, so there would be a

consequent price-driven drop in demand, as there has been for fuel, the more so since budgets are more squeezed, and job security is non-existent. Curiously, PEC fails to mention one possible increase in demand in future, and that is increased use of plug-in electric cars. However, these would mostly all be charged overnight, during off-peak hours, and with Battery Management Systems (BMS) that shut off the charge at the vehicle's battery, virtually all of these vehicles would be charged up and not adding demand once the winter peak occurs. Currently PEC's peaks occur around 5 pm in summer and around 8 am in winter. (0028-52 [Cullington, Liz])

**Comment:** ( p. 35) Section 8.3.1. Power Supply: An increase of 2803 [MWe] is identified under the heading of Generation Additions as Undesignated.... In order to meet the requirements for Generation Additions, new baseload generation will be needed. But the analysis of power supply is only based on peak demand not baseload demand. Baseload units are the most cost-effective resources to address a very predictable and stable load. But PE hasn't identified a growth in baseload, predictable and stable or not, only peak demand, necessarily unpredictable and unstable. Baseload plants are in fact the LEAST cost-effective means of meeting peak demand. However, in North Carolina PEC can earn a rate of return on a very expensive new nuclear plant (or two) through an increase in rates to its captive customers, even if much of the power from that plant is being sold outside the region. Gas plants, currently used to meet peaking power may have the most expensive fuel (with costs passed through annually) but they put the least into increasing the basis of the rate of return, being the cheapest to build. Thus there is a strong financial motive for PEC to make a case for expensive nuclear baseload plants that are not really needed. (0028-56 [Cullington, Liz])

**Comment:** (p. 8-29) Section 8.3.2: Reliability in the Region of Interest Reserves projected in PEC's current Resource Plan... are appropriate for providing an adequate and reliable power supply with capacity margins ranging from about 11 to 21 percent through the study period (2007 to 2022). These reserve levels correspond to reserve margins of about 13 to 27 percent (Reference 8.0.002). The higher reserves occur later in the planning period with the possible addition of large baseload generating plants. A 27% reserve margin is unheard of and totally excessive. (0028-57 [Cullington, Liz])

**Comment:** PEC once again is also trying to have it both ways. First they want the NRC to believe that a new baseload plant is needed based on little to no data. Then they just have to argue that it will replace other baseload. It can be or do both. (0028-62 [Cullington, Liz])

**Response:** *Affected states or regions may prepare a need for power evaluation and assessment of the regional power system for planning or regulatory purposes. A need for power analysis such as an Integrated Resource Plan or Least-Cost Plan may also be prepared by a regulated utility and submitted to a regulatory authority, such as a State public utility commission, and include both capacity and load evaluations. The determination for the need for power is not under NRC's regulatory purview. When another agency has the regulatory authority over an issue, NRC defers to that agency's decision. The NRC staff will review the need for power and determine if it is (1) systematic, (2) comprehensive, (3) subject to confirmation, and (4) responsive to forecasting uncertainty. If the need for power evaluation is found to be acceptable, no additional independent review by the NRC is needed.*

**Comment:** I think with global warming, with our economic challenges as a nation right now. With political fall out from global warming and the people who are going to be struggling for food, for water world wide, for oil and other things, that we can't assume that the next 30, 40 or 60 years, however long this plant -- these two plants actually are permitted to operate, will be the same as the last ten or 15 years in terms of what our needs are going to be in this region, what the possibilities will be and what the necessities for dealing with an international situation which could become very serious. I think you have to assume that we can't have houses taking one and a half times the amount of electricity that they have been taking now. I think we can't assume that businesses can use electricity at the same rates that they have been using historically. But we can grow in this region with people traveling long distances to commute and so on. (0001-127 [McDowell, Mary])

**Response:** *The determination for the need for power within a given area is not under the NRC's regulatory purview. When another agency has the regulatory authority over an issue, NRC defers to that agency's decision. The NRC staff reviews the need for power analysis to determine if it is (1) systematic, (2) comprehensive, (3) subject to confirmation, and (4) responsive to forecasting uncertainty. If the need for power evaluation is found to be acceptable, no additional independent review by the NRC is needed.*

**Comment:** If those trends continue, and there's plenty of land in park, let's not get that confused, we also feel like we will absorb another 500,000 of R&D space. We will absorb in retail space in the park, which is a new component, or an expansion of a component in RTP. Our general market area, five mile radius, is adding another 900,000 square feet of retail in the next five years. Our proportion share of that is another 335,000 square feet in the park. (0002-36 [Johnson, Kevin])

**Comment:** Apartments: Live, work, play has been a buzz word in this area, and we are beginning to introduce that concept in the Research Triangle Park. What does that number look like? Well, in our five mile sphere of influence, we're looking at another 20,000 dwelling units in the five-miles radius, 20,000 dwelling units. Our share of that is a thousand dwelling units in the park. (0002-37 [Johnson, Kevin])

**Comment:** In hotel space, we do have a hotel in the park. We are happy about it. But we need another one. We think that we have the capacity to add another 600 rooms in RTP. (0002-38 [Johnson, Kevin])

**Response:** *The comments generally acknowledge a growing population and associated growth of support services in business and retail specific markets. Growth in demand for electricity will be addressed in Chapter 8 (Need for Power) of the EIS.*

**Comment:** State law requires that by the year 2021, at least 20% will be met by renewable energy. Session Law 2007-397. NC WARN maintains, and will be presenting expert testimony at hearings this summer that the forecast fails to justify the need for new nuclear reactors. (0005-25 [Runkle, John D.])

**Response:** *The Order Adopting Final Rules issued Feb. 29, 2008 regarding Senate Bill 3 (Session Law 2007-397) enabled North Carolina to become the first State in the Southeast to adopt a Renewable Energy and Energy Efficiency Portfolio Standard (REPS). Under this new law, investor-owned utilities in North Carolina in 2021 will be*

required to have 12.5% of the North Carolina retail sales of electricity met through renewable energy resources or energy-efficiency measures. Rural electric cooperatives and municipal electric suppliers are subject to a 10% REPS requirement. Section 2.(a) also provides the multiple avenues at which a utility is allowed to arrive at the prescribed 12.5%. Determination of the need for power within a given area is not under the NRC's regulatory purview. However, the NRC staff will review the need for power, which will be discussed in Chapter 8 of the EIS, to ensure that the analysis is (1) systematic, (2) comprehensive, (3) subject to confirmation, and (4) responsive to forecasting uncertainty. An evaluation of alternative energy sources will be discussed in Chapter 9 of the EIS.

**Comment:** We need to put in place the infrastructure and do the research that will support electric cars and trucks. Research that will give these vehicles a range of 600 miles. The infrastructure that will allow these vehicles to be easily recharged. Maybe "on the go" as they pass recharging stations built along the highway. Additional non-polluting electric power generating plants will be needed. (0018-3 [Maher, Jim])

**Response:** The comment is noted as indicating support for additional infrastructure for an electricity-based transportation sector including new generating capacity. The comment is outside the scope of the need for power assessment that will be provided in the EIS and will not be considered further.

**Comment:** (p.8-28) (p.29) PE also considers gains from appliance efficiencies to be also built into the forecast but a review of past IRP filings show that there are no speculative deductions for customers upgrading to more efficient appliances or for new standards coming into effect. (0028-55 [Cullington, Liz])

**Response:** The comment is noted as it relates to the need for power assessment as detailed through the applicant's Integrated Resource Plan. The need for power will be addressed in Chapter 8 of the EIS and reviewed to ensure that the analysis is (1) systematic, (2) comprehensive, (3) subject to confirmation, and (4) responsive to forecasting uncertainty.

**Comment:** (p.9-47) According to PEC, bounding conditions for site selection included: The new nuclear baseload generation must reach commercial in-service status by mid 2015 but the HAR-2 and HAR-3 were never projected to make that target, but described as coming on line in 2018 or later and 2019 or later) Site's expected licensing path and regulatory outlook must reduce PEC's schedule and financial risk for establishing new nuclear baseload generation Which would be more an argument for the Brunswick site than Harris, where water supply issues are still unresolved. PEC's siting analysis considered everything in terms of what was most favorable to them and totally ignored what might be better for the environment and/or public health. So that the advantages of the Harris site for business and economic reasons is supposed to totally outweigh the tripling of tritium and other radioisotope discharges to water, tripling of air emissions, and tripling the accident threat to a large concentrated urban area downwind. (0028-97 [Cullington, Liz])

**Response:** The comment is noted, and it is acknowledged that the most current Integrated Resource Plan provided by the applicant indicates that the capacity of the first unit would not be available until 2018. The need for power assessment will be provided

in Chapter 8, and the Alternative Sites Evaluation will be provided in Chapter 9 of the EIS.

**Comment:** As I understand it, in a free market system, there are three elements of an economy; supply, demand, and price. Increasing the price of electricity makes a strong incentive to reduce energy use and invest in renewable energy. Increasing the supply of electricity releases this pressure, and makes it harder for energy conservation or generation projects to break even. Additionally, a nuclear power plant and the highly trained staff that run it are expensive, and it's hard to believe that electrical rates won't go up as a result of this action. If demand levels off, then the end result could be more expensive power, an excess of electricity, and no demand for energy conservation or renewable energy projects. This would be a terrible scenario, detrimental to the rural economies of this state, to ratepayers, and to the small businesses that are working to on energy efficiency and renewable energy. (0010-4 [Keto, Evan])

**Response:** *The determination of the need for power within a given area is not under the NRC's regulatory purview. When another agency has the regulatory authority over an issue, NRC defers to that agency's decision. The NRC staff reviews the need for power analysis to determine if it is (1) systematic, (2) comprehensive, (3) subject to confirmation, and (4) responsive to forecasting uncertainty. If the need for power evaluation is found to be acceptable, no additional independent review by the NRC is needed.*

**Comment:** (p. 10-34) Socioeconomic. The HAR will provide a new source of reliable electricity to the region, which may result in the introduction of new industries in the region or expansion of existing industries. This is not a logical assumption for a claimed beneficial socioeconomic impact. Currently, industry is declining in NC and SC, and so there is baseload supply to spare for new industry to replace old. Availability of electrical power is a factor in industrial relocations only in terms of sufficient voltage delivered to the industrial site. Competitive rates for large blocks of power may be a consideration, but adding two new \$7 plus or higher nuclear plants into the rate base is going to increase those rates. On the other hand, the addition of two new expensive nuclear plants will raise rates, and so reduce the service area's competitiveness in what has become a global race to the bottom. The tax impacts go to Wake County only, and would be expected to disappear, not persist after the plant is shut down. (0028-181 [Cullington, Liz])

**Response:** *The comment is noted, and it is acknowledged that the most current Integrated Resource Plan provided by the applicant indicates that the heavy industry base in the region of interest has continued to decline. Commercial and residential demand will be evaluated in Chapter 8 of the EIS. The Integrated Resource Plan, Certificate of Necessity, and rate base cases are under the regulatory purview of State utility commissions.*

**Comment:** The future for RTP is predicated on a couple of things. One is availability of reliable water. Two is availability of talent. Three the availability of adequate utilities to fund and manage what we think is the most successful economic development experiment in the history of the United States of America. (0002-34 [Johnson, Kevin])

**Response:** *The comment is noted. The Research Triangle Park at over 7,000 acres and 40,000 employees represents both a current and continuing demand on basic*

*infrastructure needs such as the need for reliable power. The need for power analysis will be addressed in Chapter 8 of the EIS.*

### **23. Comments Concerning Alternatives – No-Action**

**Comment:** The need for the proposed action is not to generate electricity, but to allow Progress Energy to use nuclear fuel to balance energy supply with energy demand. This should not be viewed as the only way to reach balance; alternatives that reduce electricity demand either through raising prices or providing incentives for conservation, or that shift it to times when more energy is available should also be evaluated. (0010-6 [Keto, Evan])

**Response:** *The EIS will take into account the energy conservation, energy efficiency programs, and demand-side management tools offered by Progress Energy in Chapter 8 of the EIS.*

### **24. Comments Concerning Alternatives – Energy**

**Comment:** [T]here is so much opportunity for energy efficiency improvement in the southeast, that we could meet all the needs for future energy through energy efficiency. (0001-109 [Gilbert, Bob])

**Comment:** [T]here are numerous, numerous studies that document that there is no need for new power at all, if we simply pursue energy efficiency. (0001-110 [Gilbert, Bob])

**Comment:** One of the last things I think is very important to also bring in when comparing nuclear power to energy efficiency is that it costs about five to seven hundred thousand dollars to employ a single person in the construction of a nuclear power plant. In energy efficiency, you would get about ten times the value, minimum. Energy efficiency pays somewhere in the range of 35 to \$75,000 for the jobs in that area. So in terms of the amount of money and the amount of effect that you're going to get for the investment, nothing beats energy efficiency. (0001-111 [Gilbert, Bob])

**Comment:** Conservation alone won't meet our growing needs, and nuclear energy can't be the only solution. A diverse mix of energy sources will serve us all best. (0001-118 [Hummel, Bill])

**Comment:** We really need to have enhanced energy efficiency. We need investments in renewables. We need investments in alternative energy technologies, and of course we need to continue our state of the art power plants. (0001-19 [Pinnix-Ragland, Hilda])

**Comment:** We also applaud the company for a multifaceted approach to meet the demands of growth. They stated course of action which stresses a combination of energy efficiency, investment in renewable and alternative energy technologies, and high tech power plants, impresses us as thoughtful and well-reasoned, and keeps options open for the future. (0001-38 [Joyce, Bob])

**Comment:** [W]e continue to support and endorse alternative energy means, alternate energy producing means, we also need to address current growth and future growth. It is

because of that we support the planning and coordination in the school facility department of additional capacity within the Progress Energy generating pool in order to support our growth while we look for alternate means for construction. (0001-53 [Burriss, Mike])

**Comment:** [W]e need to analyze alternative energy sources. You cannot rely on the North Carolina Utilities Commission and their review of integrated resource planning. You need to look at the alternative energy sources, both the cost of those, the environmental costs, the positive, beneficial. And when you're talking about, you know, 12 to 20 million dollars over the next decade, I think we need to be real serious about the kind of alternative use of that money. (0001-93 [Runkle, John D.]

**Comment:** Now, we are looking at many different options, and it won't take just one solution. We have to balance energy or balance solution strategy. That includes first enhanced energy efficiency. And we believe in energy efficiency. Investments in alternative energy and renewables, that's critical. And of course continuing our state of the art power plant. Even with our commitment to energy efficiencies and renewables, we will still need additional base load generation. And while I would love to say we can conserve our way, it's not going to happen. So we must plan now for the future. (0002-29 [Pinnix-Ragland, Hilda])

**Comment:** I would say that I want a sustainable energy plan for our needs. A sustainable energy plan protects the environment, it promotes social justice and it encourages economic vitality. So first and foremost I think we have to work on conservation and we have to work on it both as a business community and personally. We have to reduce our energy demands. Secondly we have to expand and reward the use of renewable sources of energy and do what's needed to make them viable in the market place. (0002-54 [Badrock, Anita])

**Comment:** A sustainable energy policy, one that balances the issues of environmental stewardship, social justice, and economic vitality by its definition keeps options open and weighs them according to the best and latest knowledge in order to make good decisions. Flexibility on how we produce and deliver electricity is essential for the public safety, for security, and yes for our environmental protection too. All forms of energy production, including nuclear energy, need to be available to the companies that we've tasked to do that. (0002-56 [Badrock, Anita])

**Comment:** Progress Energy has its highest peak demand in summer, and that occurs in the late afternoons of the hottest, sunniest days, when air conditioners, fridges, fans, and grocery store coolers and freezers are all running full tilt. Yet this is exactly when the most solar power could be generated. (0002-78 [Cullington, Liz])

**Comment:** [T]he EIS should examine alternatives to the proposed SHNPP, and their financial costs and environmental impacts. The NRC must perform (1) a detailed analysis and evaluation of the applicant's power projections and (2) and independent assessment of forecasts of growth in electricity consumption and peakload demand in the utility's service area. (0005-23 [Runkle, John D.]

**Comment:** The Chamber and its members believe the state's future energy needs must be met with a combination of new generating plants, customer conservation and the stimulation of renewable energy. (0006-3 [Ebert, S. Lewis])



**Comment:** New plants are not needed. There's a belated but fast-moving national demand for efficiency, solar and wind power - which can more than offset even growing demand. Free markets and private investors are proving that clean power boosts energy security and creates thousands of jobs. (0008-10 [Turk, Lawrence "Butch"])

**Comment:** [E]valuate the alternative where the State Government provides access and incentives for grid interconnection of small energy projects. These incentives should at least be equal to the total costs imposed on society (whether as taxpayers or ratepayers) in constructing the plant (including DOE incentives); moving facilities from the area to be flooded by the lake; the total costs of running the plant, including fuel, salaries, and supplies; the collateral impact of in migration on local schools and roads; and the total costs of decommissioning both facilities in 40 years. (0010-11 [Keto, Evan])

**Comment:** From there, consider the technologies that are on the horizon to estimate what the impacts of each technology will be in 2018. Please avoid speculation regarding potential impacts that are remote or unproven. (0010-14 [Keto, Evan])

**Comment:** When comparing alternatives, please consider the following: 1) Installing smart meters that provide a financial incentive for residents and businesses to reduce their peak energy demand, and to utilize renewable energy sources when there is an excess of available power. 2) Passing a state law that allows and encourages small businesses and homeowners to produce and sell electricity to the grid. 3) A system of revolving credit or long-term leases to make renewable energy facilities more affordable up front. 4) Keeping electricity supply at current levels and using prices and financial incentives to encourage energy conservation. 5) Microhydro and run-of-the-river hydro systems. 6) Small wind turbines generating less than 1 mw, including vertical axis turbines placed on existing towers and buildings and freestanding towers in agricultural, coastal, and mountainous portions of the state. 7) Harnessing the drainage from existing lakes and ponds with microhydro power. 8) Woody biomass energy using the most recent technology in particulate capture. 9) Wave power along the Atlantic coast. 10) Solar thermal and photovoltaic power, to be placed on buildings, over parking lots, in transmission corridors, along highway medians, and in other locations. 11) Biogas production from livestock wastes and sewage treatment plants. 12) Conservation through improved building design, landscaping, and more efficient appliances. (0010-16 [Keto, Evan])

**Comment:** [E]nergy alternatives might cost money, but that doesn't mean we shouldn't go ahead with them. In fact, there was a time where nuclear energy was not cost-effective, but the US government provided a lot of money to remove the barriers and make it feasible. So please don't consider cost to be a deal-breaker, since such reasoning would fly in the face of our Nation's history. (0010-18 [Keto, Evan])

**Comment:** [P]lease compare the pros and cons of having a large number of smaller power facilities scattered across the service area in a time of increasing threats from storms and other disasters (0010-27 [Keto, Evan])

**Comment:** It seems to me that if we have two new nuclear plants producing 2000 megawatts of electricity, then there is little incentive to allow smaller companies and individuals to participate in the energy generation and conservation market. Contractors, electricians, and home improvement suppliers would like to help reduce consumer

demand for electricity through efficiency and conservation. Farmers and foresters across North Carolina would like to help produce clean electricity and reduce our impacts and reliance on foreign energy. Hog farms along the Neuse River are interested in capturing the natural gas generated in hog lagoons; foresters want to use low-quality woody biomass for fuel; landowners on the coast and in the mountains would like to install small wind turbines and microhydro facilities; and farmers across the state would like to supplement their profits with wind and solar energy revenues. Additionally, there are hundreds of square miles of rooftops, parking lots, and highway medians where solar collectors could be placed with no significant adverse environmental impacts, allowing homeowners and businesses to generate electricity, reduce their own energy costs, and profit by selling excess power to their neighbors. As a side benefit, because the energy would travel shorter distances, the grid would be under less stress, and less energy would be lost in reaching the end user. With decreasing costs, increasing efficiencies, and a rapidly growing number of demonstration projects, the question is not if conservation and distributed renewable energy sources can make up a significant portion of our electrical demands, but when. (0010-8 [Keto, Evan])

**Response:** *Decisions regarding which generation sources and alternatives to deploy are made by the applicant and regulatory bodies such as State energy planning agencies. The alternatives must be technically viable, feasible, and competitive. Alternative actions such as the no-action alternative (energy efficiency and demand-side management), new generation alternatives, purchased electrical power, alternative technologies (including renewable energy such as wind and solar), and the combination of alternatives will be considered in Chapter 9 of the EIS.*

**Comment:** The challenge for us is the fact that just in the past year, when you look at the fossil fuel prices that we use today to generate our electricity, natural gas has gone up over 64 percent in just one year, crude oil is up over 107 percent in one year, and coal is up over 180 percent in just one year. (0002-47 [Weintraub, Sasha])

**Comment:** [I]t is amazing how quickly the price of oil has affected the budgets of our governments, of our families. We have seen double digit increases in Orange County for tax payers on their homes because we don't -- and primarily because of the cost of fuel. We have this problem because we didn't keep our options open when we planned this area to think about other ways of getting around. We needed to do that before we needed them. And we are paying a price now. Greenhouse gas emissions. The greenhouse gas emissions that this country puts out is disproportionately affecting people all around the world, and that's happened because we put too much emphasis on using fossil fuels to produce energy. And that has affected our economic vitality and our environmental stewardship throughout the world. (0002-52 [Badrock, Anita])

**Comment:** As a component of climate change the carbon footprint from the proposed units needs to be presented, from mining and processing, fuel enrichment, construction, operation and waste disposal. This needs to be compared to the carbon from other alternative power sources. (0005-19 [Runkle, John D.])

**Comment:** It is time that the US wakes up to the fact that cheap oil is a thing of the past. We need a National plan that gets us off the oil standard. (0018-2 [Maher, Jim])

**Comment:** We need to make our politicians wake up to the fact that if we don't get off the oil standard our country is destined for decline. (0018-4 [Maher, Jim])

**Comment:** Nationwide need to reduce reliance on fossil fuels, generally and imported petroleum, in particular even though PE using little to no oil for peaking demand, and of course never in recent memory for baseload generation. As for coal PE has no plans to phase out existing coal plants as far as we can tell, and has stated an intention for only a 2-year moratorium on additional coal plants, and has identified sites for two new coal plants (see Chapter 9, alternative sites). (0028-58 [Cullington, Liz])

**Response:** *The NRC does not establish or comment on public policy regarding electric power supply alternatives. The NRC does not promote the use of nuclear power as a preferred energy alternative. In addition, the NRC does not regulate alternatives to producing electricity that do not involve nuclear power. The NRC does evaluate energy alternatives, as part of its review under NEPA, of applications for new nuclear power plants, and it regulates the nuclear industry to protect the public health and safety within existing policy. The discussion of alternative energy sources in Chapter 9 of the EIS will describe the potential impacts from alternative energy sources such as fossil-fired facilities and will also include energy efficiency and renewable energy sources.*

**Comment:** Because looking at the Environmental Impact Statement, looking at the impacts, everybody in this state could put solar panels on, solar hot water heaters, put new windows on. If you're talking about jobs, let's grow a thousand new companies that will put on solar panels and solar hot water heaters. Sanford could be the solar capital of the world, actually at this point, and really have those kind of jobs. (0001-82 [Runkle, John D.]

**Comment:** Nuclear power is not magic, and it can not remove carbon dioxide from the air, and it especially is not going to do that when it is operated in addition to coal plants to meet what Progress Energy says is going to be ever increasing demand. This is important for the public to understand. Progress Energy's plans do not show them shutting down coal plants. Instead they plan for more and more electricity powered by coal and nuclear. They have proposed only a 2-year moratorium on additional coal plants, presumably just long enough for them to get approval for these two new nuclear power reactors, then they apparently will be adding yet more coal plants. (0002-60 [Cullington, Liz])

**Comment:** If Progress Energy actually wanted to do something about the climate, then they would need to shutdown their coal plants and put the money they plan to put into two new reactors into reducing energy demand and increasing our energy efficiency. (0002-75 [Cullington, Liz])

**Comment:** The best, cheapest, and fastest way to lower carbon emissions from the electricity sector is to reduce wasted electricity, upgrade existing buildings and appliances, and educate the public about the importance and urgency of slowing down runaway climate change, including quite probably us having to make life style changes. (0002-76 [Cullington, Liz])

**Comment:** Clearly Progress Energy has stopped arguing that wind and solar don't work, which they used to do. Instead they have dredged up some slightly dotty claims such as the ones that a concentrating solar plant or wind farm is really much uglier than a nuclear reactor, and that the land that the wind farm or solar plant would be sited on would be just ruined forever. They claim that these other sources have the same small

environmental impact as a nuclear reactor, even though wind and solar do not require fuel, don't involve constant mining and waste disposal, don't require and then pollute a water supply and can't meltdown and permanently contaminate up to half the east coast. (0002-77 [Cullington, Liz])

**Comment:** The proposed action could prevent homeowners and businesses from lowering costs, increasing wages, and creating jobs through renewable power. If farmers and foresters are able to supplement their profits by contributing to energy generation, they are more likely to keep working lands working, and less likely to sell them to become subdivisions or shopping centers. Please consider the social, economic, and environmental impacts both positive and negative, of the proposed action and all alternatives. Also consider how the proposed action and alternatives can affect the impacts associated with the continued loss of working lands in North Carolina. (0010-10 [Keto, Evan])

**Comment:** [P]lease evaluate the impacts of Progress building one power plant, and agreeing to purchase at least 1000 megawatts of energy from small energy producers through an open enrollment net-metering program. (0010-12 [Keto, Evan])

**Comment:** As previously stated, producing 2000 mw of nuclear power might make it harder for business owners, farmers, foresters, and communities to generate their own power, and sell excess power to the grid. Additionally, it will mean that we won't need people who would sell, install, and service these power facilities. While the expected employment benefits of the proposed action are well-documented, numerous studies have shown that renewable energy creates more jobs for the same amount of energy. Additionally, there are many jobs related to energy efficiency, ranging from landscapers planting the right kinds of trees to shade buildings and reduce cooling costs, to contractors installing skylights and foam insulation, to to electricians putting in smart electricity meters and energy-efficient heat pumps. A huge number of blue- and white-collar jobs are created in North Carolina by building renewable energy and focusing on energy conservation, and these jobs might be more than those provided by nuclear energy. Please provide a direct comparison of the number of jobs per 1000 mw of nuclear power versus the number created by 1000 mw of energy efficiency, biomass, microhydro, wind, solar, biogas, wave power, or any other alternative considered. (0010-19 [Keto, Evan])

**Comment:** Because of the structure of the current electricity system, it has been hard for rural and independent providers to gain access to the market. Resolving these access issues may lead to the balance between supply and demand that we seek. We need to consider all alternatives that can balance supply and demand. (0010-7 [Keto, Evan])

**Comment:** 9.2.1.3 Purchasing power from other utilities or power generators. Can't pay more to small producers or cogenerators than would pay to purchase power elsewhere or generate itself. Too few to be viable alternative. But this ignores two things, one being NC Green Power which supplements what utilities pay to small to medium sized independent generators, at the rate of 4 cent per kWh, and the second is that under NC law, Progress Energy is required to obtain a significant amount of power, 12.5% from a combination of efficiency and renewable energy. This is not in PE's forecast cited in Chapter 8. Because there is not enough electricity to import from nearby states, purchasing power from other utilities or power generators is a less attractive option than

the construction of new nuclear units at HAR. However a study from SERC states that there is a surplus of power in the SouthEast. (0028-63 [Cullington, Liz])

**Comment:** Page 9-11 Technical improvements in wind turbines have helped reduce capital and operating costs. In 2000, wind power was produced in a range of \$0.03 to \$0.06/kWh (depending on wind speeds), but by 2020 wind power generating costs are projected to fall to \$0.3 to \$0.4/kWh). Reference 9.2.009 There is no way that power from HAR-2 or HAR-3 could be that low. The SHNPP came into to a rate case hearing after completion with busbar cost of 25 cent per kWh. (0028-66 [Cullington, Liz])

**Comment:** Even at the higher estimate of \$550 million, that a capacity cost of only \$994.57 per kW. If North Carolina solar range is 4.0-4.5, and California ranges from 5.00 to 8.00 depending on which area of the state (Source: National Renewable Energy Laboratory), then you could double to cost to capacity ratio for North Carolina to \$1989.14 per kW. And these are far more predictable costs. In addition, the plant would be manufactured in the USA with fewer carbon emissions from imports of parts or rare metals, very low operating costs and virtually no environmental impact other than nonpolluting land use during the years of operation. (0028-72 [Cullington, Liz])

**Comment:** What is uniquely suitable for a summer peaking utility like Progress Energy is that baseload solar thermal is a load following technology, in that while it can store power it also increases along with demand as the temperature rises. Currently Progress Energy is missing out on gigantic reductions in its AC demand that are available: raising institutional thermostats above 72, eliminating sun gain, radiant barrier and other insulation in ceilings and roofs. But its probable that air conditioning is one of the largest and most variable loads on Progress Energy's system in the Carolinas, as well as in the past the most predictable. It is also the largest area of potential efficiency. (0028-73 [Cullington, Liz])

**Comment:** (p.9-15) While concentrating solar power technologies currently offer the lowest cost solar electricity for large scale electricity generation, these technologies are still in the demonstration phase of development and cannot be considered competitive with fossil- or nuclear-based technologies ... \* Now don't that take the cake!!!! The AP1000 isn't even at the demonstration stage. The little model doesn't count because it was for the AP600 and the AP1000 was significantly changed from that and is now being changed again! On the other hand concentrating solar plants are up and running. So we are expected to take the more expensive and untried over the cheaper and proven, so PEC can earn more profit from the more expensive plant. Might we note here that PE is currently a summer peaking utility and that that peak occurs just when the sun is shining most brightly!!! (0028-74 [Cullington, Liz])

**Comment:** (p.9-17 Section 9.2.2.5) Regarding wood waste and other biomass, PE complains that the largest wood waste power plants are 40-50 MWe in size which would not meet the proposed 2000 MWe baseload capacity. (As stated before, PE hasn't demonstrated the need for 2000 MWe baseload, or even peaking capacity) but their service area could be adequately served by 40 or 50 plants distributed throughout the service area closest to fuel sources, or preferably fewer in combination with other renewable resources. They would be especially suitable in a distributed combination model. The impact of wood waste plants is not the same as for a coal fired plant, because if coal remains in the ground the carbon is not released, but for wood waste the carbon would be released, unless it is buried as biochar in which case part of the carbon

is released and part is sequestered as plant food for crops or preferably forest. PE cites an RTI study for the NC Division of Forest Resources that NC's wood energy production is 1017 MWe. PE says that due to the small scale of biomass generating plants, high cost, and lack of an obvious environmental advantage [!!!!], biomass energy is not a reasonable alternative for baseload power. But this is ignoring the fact that PEC already has built coal plants, so the construction costs (adaptation if any) would be tiny. Unlike coal ash, wood ash is not hazardous and is a potential compost feedstock or soil amendment, so that the waste would be either on the credit rather than debit site, or neutral. **(0028-77 [Cullington, Liz])**

**Comment:** 9.2.2.7 Energy Crops Alternatives including burning crops, gasifying (including wood waste) and converting to ethanol. None of these technologies has progressed to the point of being competitive on a large scale or of being reliable enough to replace a baseload capacity of 2000 MWe. However, Progress Energy Florida has signed a long-term agreement to buy power from a biomass plant burning switchgrass. November 17 2007, it was reported that Duke Energy "planned to invest in biomass power plants" using "animal waste and other organic material." A March 27 story in the Charlotte Observer described an effort to build a series of biomass plants by Rollcast Energy Inc., and hoping to have 10 operating in NC by 2015, saying the state has the potential for 20. New Bern NC currently has a 45 MW biomass plant. It appears that a biomass plant can go from groundbreaking to the grid in two years. The cost of construction is somewhat higher than for a coal plant, but the cost of fuel is lower [and could be more stable over time]. The most advantageous biomass plants would be those generating energy from a renewable fuel that would otherwise decay and release emissions, such as wood waste like brush. **(0028-78 [Cullington, Liz])**

**Comment:** 9.2.3 Assessment of reasonable alternative energy sources and systems. What's interesting about this table is that nothing is rated as NONE rather than SMALL. We find that the impact of "accidents" is considered equivalent for all 4 alternatives, which is patently not the case. The impact of an accident at a nuclear reactor could be beyond LARGE, whereas that from some of the other alternatives would be minor to nothing at all, or accidents not likely during operation. The "human health" impact of HAR is "small," for coal "moderate" for gas "small" for alternatives combination "Small to moderate" !!!!! That is just plain incorrect. **(0028-81 [Cullington, Liz])**

**Response:** *The NRC does not establish public policy regarding electric power supply alternatives nor does it promote the use of nuclear power as a preferred energy alternative. Decisions regarding which generation sources and alternatives to generation to deploy are made by the applicant through least-cost planning and integrated resource plans. Additional regulatory purview is provided by bodies such as State energy planning agencies and commissions. However, the discussion of various alternatives to the proposed project is pertinent to the extent that an energy alternative must reasonably be expected to replace the base load energy supplied by the proposed project, whether individually or in combination. The alternatives must be technically viable, feasible, and competitive. Chapter 9 of the EIS will include the no-action alternative (energy efficiency and demand-side management), new generation alternatives, purchased electrical power, alternative energy technologies (including renewable energy such as wind and solar), and the combination of alternatives. For acceptable alternatives, the potential for environmental and economic impacts will be assessed against the proposed project.*

**Comment:** Coal fired power plants are the single most avoidable and concentrated cause of human greenhouse gas emissions. The carbon dioxide emissions from coal plants are so great that they can wipe out the reductions that individuals and businesses are planning to make. (0002-61 [Cullington, Liz])

**Comment:** I am intrigued by your new interests in the hazards of coal-fire power. It's incredible -- I have to tell you about this. The Bullrun Steam Plant in Oak Ridge, a big tall smoke stack, they give out free car washes within ten miles. Those things aren't any good. (0002-96 [Funderlic, Bob])

**Comment:** [T]here is a general agreement that climate change is increasing the intensity and number of hurricanes that are likely to occur along the Atlantic. Since North Carolina is likely to be hit by some of these hurricanes, as well as more frequent tornadoes and floods, it seems like there is a good chance for grid failure as trees and power lines fall down. It seems like a large number of small power plants would be able to come back on line more quickly than a centralized set of large power plants with transmission lines stretching across the state. Isn't that why FEMA and DOD rely on portable diesel generators in the wake of a natural disaster? (0010-23 [Keto, Evan])

**Comment:** 9.2.2.10 Coal. PE claims that US has "abundant low cost coal reserves" and that "the price of coal...is likely to increase at a relatively slow rate. Even with recent environmental legislation, new coal capacity is expected to be an affordable technology for reliable, near term development and for potential use as a replacement technology for nuclear power plants." Cost usually averages about \$0.023/kWh. (This appears to be just fuel cost.) (0028-79 [Cullington, Liz])

**Comment:** 9.2.2.11 Natural gas. "There are currently 14 natural gas-fired plants being considered for North Carolina. Together they would be able to generate over 9000 MWe..." Faster to construct and smaller land requirements, only 110 acres for 1000 MWe plant. "Co-locating ... with an existing nuclear plant would help reduce land-related impacts." It should be noted that there is a major gas pipeline near the Harris site. (0028-80 [Cullington, Liz])

**Comment:** p.9-24 9.2.3.1 Coal fired power generation. It appears that PE is saying that a new coal plant would create a lot of construction jobs. But a coal plant would "emit particulates and chemicals" and "public health risks such as cancer and emphysema are considered likely results." SO<sub>2</sub> and NO<sub>x</sub> "have been identified with acid rain and water withdrawals would cause losses to aquatic biota ... through impingement and entrainment, and discharge of cooling water to natural bodies." Equally true for a nuclear plant. Then how is this effect called SMALL rather MODERATE or even LARGE. (0028-82 [Cullington, Liz])

**Comment:** 9.2.3.1.1 Air quality (coal) In comparing coal with nuclear, PE cites "water quality impacts from runoff and other potential adverse consequences of coal mining." How does it rate uranium mining? (0028-83 [Cullington, Liz])

**Comment:** 9.2.3.1.2 Waste Management By PE's reckoning, the waste impacts of a nuclear plant or two are only SMALL, yet a coal plant would be MODERATE and a alternatives combo would be SMALL to Moderate. This is WRONG. The waste impacts of a nuclear plant are HUGE and the waste impacts of the wind-solar-gas option are virtually nonexistent. (see 9.2.3.2.2. below) If PEC isn't going to take its homework

seriously I don't see why valuable NRC staff time should be taken up reviewing this application. (0028-84 [Cullington, Liz])

**Comment:** 9.2.3.2 Natural Gas. "The environmental impacts of operating natural gas-fired plants are general less than those of other fossil fuel technologies" sort of an understatement. T(he use of that gas by customers to replace electrical heat generation would be even more advantageous.) (0028-85 [Cullington, Liz])

**Comment:** 9.2.3.2.1. AQ PE admits gas is cleaner and more efficient (56 vs 33 percent) but claims it would release "similar types of emissions but in lesser quantities." What about mercury? PE does say no SO2 emitted. (0028-86 [Cullington, Liz])

**Comment:** 9.2.3.2.2. Waste Management. "Gas fired power generation would result in almost no waste generation producing minor (if any) impacts; therefore, impacts associated with waste management would be SMALL." No, they would be NONE. (Even under these definitions) And the waste management impacts of a nuclear plant are not small, they are large, under these criteria or any other. (0028-87 [Cullington, Liz])

**Comment:** 9.2.3.2.3 Land use. A new gas plant would "disturb" approx. 60 acres of land "and associated terrestrial habitat" with another 10 acres for pipeline. Both text and table 9.2-2 fail to identify that the "SMALL" (possibly) "MODERATE" socioeconomic impact of the gas fired alternative is Beneficial not Adverse. All other impacts on the table not identified are adverse impacts. Yet in Section 9.2.3.2.4 PE states that "The natural gas generation at the HNP site would require less land area than the coal fired plant but more land area than the nuclear plant"!!!! Says plant would require 110 acres not 60-70 acres and "an additional 3600 acres for wells, collection stations and pipelines to bring the natural gas to the generating facility. Therefore, constructing a natural gas generation plant would not be an environmentally preferable alternative for the HNP site." PE is including in the land use for a gas plant the gas field from which the gas comes from and the entire system of getting the gas to the plant. But there's already a pipeline right there, and PEC doesn't count the many acres of uranium mine, mine slag heaps, processing facilities, fuel fabrication, and so on and so forth, as part of the footprint of the new reactors, in fact they forget to mention flooding 4055 more acres. (0028-88 [Cullington, Liz])

**Response:** *Alternative energy sources, including renewable and fossil fired sources, will be evaluated in Chapter 9 of the EIS.*

**Comment:** Even though centralized solar concentrating plants using parabolic troughs have been safely operating in the U.S. for fourteen years, Progress Energy claims that this technology is still at the demonstration stage. By that standard, so is the uniquely designed Shearon Harris Plant, unit one. (0002-79 [Cullington, Liz])

**Comment:** I give you the reference. 58,000 windmills to replace one nuclear reactor. (0002-95 [Funderlic, Bob])

**Comment:** The costs, impacts, and requirements for the renewable energy alternatives are particularly inaccurate in the Environmental Report, with inflated land requirements for wind and solar, and conclusions that the waste impacts of wind and solar are greater than that of a nuclear power plant! On the other hand, Progress Energy includes only the 192 acre footprint for the land use impact of the new reactors, omitting the thousands of



acres to be flooded, paved, taken for new transmission line right of way, relocated buildings and facilities etc. In addition, Progress Energy has substituted their calculation of land requirements for flat plate or tracking photovoltaics, for solar thermal plants which is a completely different technology. (0022-12 [Bonitz, John] [Cullington, Liz] [Dukes, Patty] [Eads, Don] [Ellison, Margie] [King, Ed] [Meyer, Nick] [Royal, Lil] [Schwankl, Audrey] [Schwankl, Jimmy])

**Comment:** 9.2.2 Alternatives that require new generating capacity. PEC says a "reasonable set of alternatives should be limited to analysis of single discrete electrical generation sources and those electricity generation technologies that are technically reasonable and commercially viable." So they say they considered, wind, geothermal, hydropower, solar power (concentrating solar systems, PV cells), wood waste (and other biomass), MSW, energy crops, petroleum liquids (oil), fuel cells, coal, natural gas. In performing evaluation of what not reasonable/feasible to generate baseload power "PEC relied heavily on NRC's Generic Environmental Impact Statement (GEIS) for License Renewal of Nuclear Plants." which is now something like 14 years out of date!. There is no GEIS for NEW nuclear plants. That GEIS included consulting various state energy plans to "identify the alternative energy sources typically being considered by state authorities across the country." NRC developed a "reasonable set of energy source alternatives to be examined." The costs and technologies in that old GEIS are totally inapplicable here, and should not be accepted as representative of current costs and requirements. (p.9-9) "Distributed energy generation was not seen as a competitive or viable alternative and was not further examined." It is not acceptable for this alternative to be excluded from the analysis, particularly when PEC did find a combination alternative to be viable. Distributed generation has been shown to require low to no additional transmission line costs. (0028-64 [Cullington, Liz])

**Comment:** 9.2.2.1 Wind. PEC claims that a turbine with a generating capacity of 1.5 MWe would require approximately 10.8 hectares (ha) (26.7 acres [ac]) of dedicated land for the actual placement of the wind turbine. The concrete base of one large wind turbine is not even one acre, and typically are not located singly. The land around one, or between several turbines, isn't going to be concreted over, and doesn't have to be off limits to agriculture and it's common in Europe to see cows or sheep grazing nearby. The land could be used for any agricultural use or left in a relatively natural state. It is simply outrageous to claim these ridiculous land use figures as equivalent to the land use changes that would be required for the construction of a nuclear reactor and the flooding of a lake that would become contaminated. (0028-65 [Cullington, Liz])

**Comment:** Regarding bird fatalities, the Altamont Pass Wind Resource Area in California was sited in a windy, but particularly birdy valley, and it has a very old fashioned design and windmills very close together, like a group of fast spinning fans. New turbines just have three blades which rotate relatively slowly and the turbines are not placed close together. (0028-67 [Cullington, Liz])

**Comment:** North Carolina has been long identified as an area of tremendous wind potential. While some of that is in the NC mountains, outside of PEC's service area, and limited by a ridge law to preserve the view, there is a huge potential at the coast, offshore and on, and commercial development of these resources is beginning. (0028-70 [Cullington, Liz])

**Comment:** Section 9.2.2.4 (p.9-14 onwards). PEC says that land requirements for 2000 MWe for solar thermal "too large to construct at the proposed plant site." and also has "substantial impacts on natural resources (such as wildlife habitat, land use and aesthetics.)"-- worse than a nuclear plant? But a solar thermal plant doesn't need access to a large cooling lake and so wouldn't necessarily have to be built at that site, although PEC has a gazillion acres there besides the current plant site, reservoir and perimeter. It turns out though that PEC has got its land requirements all wrong, see below. PEC says NC's solar capacity is approx. "4500 to 5000 W/hr sq. meter/day" using flat plate. But says 4000 to 4500 watt hours per square meter per day using concentrated (tracker). Their source for this is reference 9.2-016, supposedly DOE but this data is clearly wrong since it shows a lower generation rate from a tracker system than from flat plate! And everyone and his uncle knows that that is backwards. But a tracker system is photovoltaic, like a flat plate, which is a completely different technology from solar thermal (also called solar concentrating power). PEC appears to be using data (right or wrong) for flat plate collectors to come up with land requirements for solar thermal, and this is likely not an innocent mistake. Unlike photovoltaics, which convert light to electricity, solar thermal plants concentrate the sun's heat, using mirrors to heat a liquid to create steam to drive a turbine to create electricity. Newer technologies have eliminated the costs and delays involved in older parabolic trough designs. Utilities are interested in this source of power because it is cheaper than so-called clean coal IGCC. (0028-71 [Cullington, Liz])

**Comment:** Many of PEC's references in this and other sections of the ER are old, and/or self-referencing. For instance, in this section, regarding concentrating solar (also sometimes called solar thermal:) one reference is an article in Carolina Country Magazine, which is created for and distributed monthly to customers of North Carolina's rural electric cooperatives. The source for this type of content is frequently the generating utilities themselves or their industry associations). This is cited as source for the highly technical opinion that the NC AVERAGE of 4 to 4.5 kwh per sq. meter/day and slightly higher in the summer (!) is highly dependent on the time of year, weather conditions, and obstacles that might block the sun. Such as very large UFOs presumably. What part of AVERAGE do PE's technical writers not understand, eh? And here's another great argument. Currently, PV solar power is not competitive with other methods of producing electricity for the open wholesale electricity market. PV solar power will not be a viable alternative because it will not meet the baseload capacity necessary for HAR. Isn't that a bit of a Freudian slip? Isn't it supposedly the other way round? What's this about including wiring lights and appliances in the cost of PV solar, not to mention, design costs, land, batteries and so on. Isn't PEC trying to bump up the cost instead of citing some actual examples of operating plants and their costs? (0028-75 [Cullington, Liz])

**Comment:** (p.9-16) Regarding the land use requirements for solar PV compared to solar, PE states that with solar this land use is preemptive; land used for solar facilities would not be available for other uses such as agriculture. (Well it can't be for nuclear either, and PEC has vastly understated the land use requirements for two new reactors, of which the 4055 acres to be flooded is one example. It would be a heck of a lot easier to farm the land once occupied by solar panels than it would be to later farm the land once occupied by a nuclear plant and its befouled cooling lake. Solar is dismissed as not meeting baseload requirements although PE has not provided any data on their baseload baseline demand. (0028-76 [Cullington, Liz])

**Comment:** Section 9.2.3.3.1 Wind and solar, combined with fossil fuel-fired power plant(s) could generate baseload power to be considered a reasonable alternative to nuclear energy produced by the HAR. however... environmental impacts, such as land requirements and aesthetics and lack of guaranteed reliability of wind and solar, make this not a viable combination of alternatives. Well is it a reasonable alternative or isn't it? The land requirements for wind and solar are bogus, and natural gas could provide back up, so eliminating this as a hybrid alternative is simply outrageous. It's environmentally preferable, and the lower costs of wind and solar could offset high gas prices. The ability to generate baseload power in a consistent, predictable manner meets the business objective of the HAR. The business objectives of PEC is not a concern of the EIS. (0028-89 [Cullington, Liz])

**Comment:** [!]n its study of alternatives, in Chapter 9 PEC manages to include at least one new road for every wind turbine or solar panel!!!! (0028-9 [Cullington, Liz])

**Comment:** (p. 9-30) PEC admits that gas-fired generation is suitable as back up for wind /solar (quick start up and shutdown) "The operating characteristics of gas-fired power generation are more amenable to the type of load changes that could result from including renewable generation such that the baseload generation output of 2000 MWe is maintained." But PEC says that "use of renewable [sic] in conjunction with fossil only marginally reduces fossil-fuel use and environmental impacts by the renewable's capacity factor." Incorrect. The use of renewable sources in conjunction with gas reduces gas use and its environmental impacts by the renewable capacity factor. PEC is trying to imply quite falsely by the use of "only marginally" that the contribution of proposed viable, large solar and wind capacity would be really tiny, ever. Once again the artificial structure of the EIS and the way that PE reduces all waste issues into a little package called small, means that they can try to portray the hybrid combo of gas/wind/solar as less environmentally friendly, even though these 3 sources produce NO WASTE during operation. However, waste disposal of both HLW, LLRW BRC waste, LLRW incineration, have impacts on water quality resources and not just at the Harris site but elsewhere, as does uranium mining, and LLRW incineration has significant AQ impacts. LLRW and HLW waste treatment, incineration and disposal also have large socioeconomic impacts outside of the immediate Harris plant area. The disposal of LLRW removes land from other uses permanently, and in addition buffer zones are required, sometimes expanding to "contain" underground plumes of contamination (as at Barnwell). Groundwater aquifers are permanently removed from human drinking water resources and contamination can affect creeks. (0028-90 [Cullington, Liz])

**Comment:** p.9-31 PEC claims that the wind-solar-gas combination would cost more (so more profit for them, ha ha) but of course the comparison is to a bogus cost for new reactors, based on some old studies, not real costs such as those they had to file in Florida, which showed a \$7 to \$7.5 billion cost per reactor. PEC does not cite any solar costs/requirements from current projects coming on line in the present, rather than the past. For instance, this solar project which is just a few miles from the Shearon Harris Nuclear Plant, not in the southwest USA.(Nasdaq: SPWR), will develop a solar electric power farm on the company's Cary, NC, headquarters campus. Scheduled to go online in late 2008, the project is the latest in the company's continuing sustainability efforts to conserve environmental resources..... Covering five acres, the 1-megawatt photovoltaic (PV) solar array will feature SunPower Tracker solar tracking systems. The Tracker tilts toward the sun as it moves across the sky, increasing energy capture by up to 25 percent over fixed systems while reducing land-use requirements. SAS' solar farm is

estimated to generate 1.7 million kilowatt-hours (kWh) per year, reducing carbon dioxide emissions by over 1,600 tons annually. This is equivalent to the carbon dioxide emissions from the consumption of more than 167,000 gallons of gasoline....." Thus a 1000 MGW solar farm would require no more than 5,000 acres, which is considerably less than the land needed for two new Harris reactors (expansion of exclusion zone, expansion of Harris lake, and so on as noted elsewhere). In addition, under a distributed model, no useful land need be sacrificed to add solar capacity in the form of either fixed or tracking panels, because PEC's service area contains more than enough rooftop area. Every rooftop where solar radiation is being intercepted for power generation would also have a commensurate drop in AC demand. 1000 MGW of solar thermal would require less than 5 acres per MGW. (0028-91 [Cullington, Liz])

**Comment:** Another very small solar project that is in NC and which uses rooftop is a Benson, NC sheet-metal fabrication company which has installed a 170 kW solar PV system, which produces 150-750 kWh a day. Capacity cost was \$4470.59, operational cost and land use cost, zero. (Source: Fayetteville Observer, July 21, 2008 "Clean, simple and safe" energy grows in popularity <http://www.fayobserver.com/article?id=299834>) Local businesses are not investing in concentrated solar power/solar thermal, which is a baseload source because these power plants are larger megawattage and produce more power than these customers need. Solar projects that not retrofitting but are designed in at the start of a building project can deliver PV energy at 5 cents/kWh (Source: Innovative Design) It should also be noted that a combination alternative that is distributed might have few to no extra transmission costs. A Minnesota Department of Commerce study released 6/16/08 shows that distributed wind turbine power can be added to the existing grid with no additional high voltage power lines. Which is another favorable cost factor for the mixed alternative (solar, wind, gas). Of course North Carolina does not have the same wind potential as Minnesota perhaps, but this reduced cost for distributed versus concentrated generation is a significant argument for more, smaller distributed generation, in addition to less margin required, and for some options considered here, a less concentrated public health risk. (0028-92 [Cullington, Liz])

**Comment:** Section 9.2.3.3.2 PEC cites a parabolic trough solar plant in the Mojave Desert (SEGS) which now has reduced costs to \$0.08 to \$0.10 per kWh. Uses gas as backup. (p. 32) PEC claims that, given a gas and solar/wind combination, "if the renewable portion of the combination alternative has a potential output that is equal to that of the HAR, then the impacts associated with the gas fired portion of the combination alternative would be somewhat lower in terms of operation but the impacts associated with the renewable portion would be greater." But not if there are no operational impacts, only impacts from construction. Because many times zero is till zero. About the only negative impact that PEC can come up with (apart from that mythical waste stream) is that for some reason they are supposed to be uglier than a nuclear plant, even when next to a nuclear plant. Besides the fact that that is not supported by any survey data, even if it were true, it wouldn't be affected by capacity factor etc. With equally loopy logic, PE says that "Use of a gas-fired power generation facility combined with wind and solar facilities would reduce the land use and aesthetic impacts from the wind and solar power generation facilities." It's really unclear what they are talking about. If they are talking about putting all these alternatives at the Harris site then one would have to say that the aesthetics of 3 reactors are worse than one, (Moderate-adverse) of a coal and nuclear combo, worse (Moderate-adverse), of adding a gas plant, probably an impact of NONE, and of a solar/wind/gas combo at the Harris

site, quite possibly a Small to Moderate impact that is BENEFICIAL, because it would then be a local attraction, Progress Energy's Energy Park. (In the UK there is at least one wind farm with an associated energy exhibition that is advertised as a family day out.) For instance the hybrid alternative is supposed to have a greater impact on air quality, produce more waste, remove even more land from use, be uglier, and have a worse effect on human health!!!! Opposite of the case. This last outrage is added to Table 9.2-2 even though there is NO analysis or even discussion of the human health impacts of wind and solar, because THERE ARE NONE! Of course if they were to displace coal generation there would be a LARGE Beneficial impact on human health, but PE plans to add 2000 MWe (of nuclear) on top of polluting coal and nuclear plants. (0028-93 [Cullington, Liz])

**Response:** *The comments are noted. The NRC staff recognizes that when evaluating energy alternatives to the proposed project, particularly for technologies that continue to be developed and commercially deployed, the evaluation must include relevant information representative of the current technology. However, the viability of various alternatives to the proposed project is pertinent to the discussion to the extent that the alternative must be capable of reasonably replacing the base load energy supplied by the proposed project. The alternatives must be technically viable, feasible, and competitive. Chapter 9 of the EIS will include alternative actions such as the no-action alternative (energy efficiency and demand-side management), new generation alternatives, purchased electrical power, alternative technologies (including renewable energy such as wind and solar), and the combination of alternatives.*

**Comment:** PEC admits that in spite of the intermittent nature of wind power, with storage it could be "captured on a continuous basis" and dispatched as needed. Even when generated in remote locations, new transmission line cost addition still brings wind in more cheaply than \$8,500 kW. (0028-68 [Cullington, Liz])

**Comment:** That added transmission line cost works out to a mere \$266.49 per kW. In addition it appears that high voltage DC transmission (HVDC) if preferred, has minimal losses, 3% per 1000km/600 miles, depending on voltage level and construction details. (0028-69 [Cullington, Liz])

**Response:** *Transmission generally falls under the regulatory purview of regional and Federal authorities, whose responsibility is to promote the reliability of delivered power. Transmission systems will be considered and reviewed in the EIS. Wind power as an alternate energy source will be considered in Chapter 9 of the EIS.*

**Comment:** Also, since all three plants use the same fuel, isn't there a risk of uranium supply getting stretched thin by the expected nuclear renaissance? What's to ensure that we'll be able to keep all three running at full power in a world with increasing uranium demand? (0010-25 [Keto, Evan])

**Response:** *The sourcing and access to fuel is outside the scope of the EIS and the comment will not be considered further.*

**Comment:** How can water quality impacts from TWO more reactors at the Harris site be considered small, (and equal to that of a gas plant or gas/wind/solar combination) when this would triple the tritium discharge into the Cape Fear which is a drinking water source for multiple counties and towns--when tritium cannot be filtered out of water and

has potential damaging effects on human and livestock health. In addition, see my comments on Chapter 5: evaporative losses from the Lake could affect water quality there and for Cape Fear River downstream water users. The case has definitely not been made that this combination alternative is not environmentally preferable to two new reactors. I would rather think that the case has been made to proceed with that instead, once the analysis is refigured to reflect reality. (0028-94 [Cullington, Liz])

**Response:** *The NRC staff will evaluate the proposed plant water use, cooling system operation, and effluent discharge descriptions in the EIS relative to the selected alternative technologies. The environmental impacts of plant operation will be addressed in Chapter 5 of the EIS. Related ecological, socioeconomic, and human health impacts of plant operation will also be addressed in Chapter 5 of the EIS. The NRC does not have the authority to set water quality limits; plant effluent discharges will continue to be regulated by State and Federal authorities.*

## **25. Comments Concerning Alternatives – System Design**

**Comment:** 9.4.1. The condenser creates the low pressure required to draw steam through and increase the efficiency of the turbines. The lower the pressure of the exhaust steam leaving the low pressure turbine, the more efficiency is gained. The limiting factor is the temperature of the cooling water. This explains the lower-efficiency-in-hot-weather phenom at power plants, and also demonstrates that two new reactors at the Harris site will not assure reliable 2000 MWe baseload power during heat wave/drought conditions when that power might most be needed. (0028-125 [Cullington, Liz])

**Response:** *Hydrological considerations during station operation will be addressed in Chapter 5 of the EIS. Evaluating station efficiency is outside the scope of the EIS. The applicant addresses their legal obligation and strategy to provide reliable power through their respective Integrated Resource Plan process, which is evaluated and ruled upon by the State Utility Commission.*

**Comment:** I don't understand the need to raise the water level in Harris Reservoir. There are air-cooled technologies to remove heat from steam power plants which require very little water, like the radiators in cars and trucks. It might be a bit more expensive, but raising the lake will destroy bridges, boat ramps, park facilities, and wetlands, which is also costly, and passed on to ratepayers with higher electricity bills. Please evaluate the costs and benefits of the alternative of a dry cooling tower, and keeping the lake at the current water level. (0010-29 [Keto, Evan])

**Response:** *Alternative heat dissipation systems will be addressed in Chapter 9 of the EIS and will include engineering and economic analyses of alternatives in addition to the selected heat dissipation system.*

## **26. Comments Concerning Alternatives – Sites**

**Comment:** (p.9-54) The Harris site "had a higher population" than the other sites, yet it has no fundamental advantage, and some major disadvantages, like water supply. (0028-100 [Cullington, Liz])

**Comment:** Section 9.3.2 PEC states that "it can be expected that the effects of a new unit should be comparable to those of the operating nuclear plant." But what if the new plant is a radically different design, with no long term data on its "effects"? In addition, three reactors at one site mean triple the radioactive air emissions (or greater, given the design of the AP1000)/ "Co-located sites can share existing infrastructure" so less construction impact. However, elsewhere in the ER it is clear that this particular site involves many additional large construction impacts that might not be involved at a different site, because of the many impacts of the enlargement of the lake system. (0028-101 [Cullington, Liz])

**Comment:** It seems somewhat incredible that PE would consider it valid to submit for an EIS an alternative greenfield site that is marshy with numerous wetlands and below the 100 year flood plain level. The applicant is supposed to compare the preferred site to one or several viable alternative sites, not ringer sites. (0028-102 [Cullington, Liz])

**Comment:** None of this of course is mentioned in Chapter 9 when comparing the Harris site to the Brunswick site with its access to ocean water for cooling etc. (0028-33 [Cullington, Liz])

**Comment:** Table 9-3-1 (pages 9-82-83) PEC is overstating adequate water supply for the Harris site (see comments on Chapter 5) and doesn't list anything wrong with the Brunswick site, which has access to ocean water. This site would appear preferable as an existing nuclear site with access to more reliable water, and without all the complicated relocation issues involved with raising Harris Lake. (0028-95 [Cullington, Liz])

**Comment:** Section 9.3 (page 9-42 onward). The applicant is required to demonstrate no obviously superior site(s). However, with the serious questions about adequate water supply at the Harris site and ocean supply available to the Brunswick site, PEC has not demonstrated the superiority of the Harris site. In addition the selected site must meet certain stated criteria: 1) Site must not cause significant adverse effects on other users 2) no further endangerment of listed threatened, endangered or candidate species (federal, state, regional, local and affected Native American tribal) 3) no potential significant impacts to spawning grounds or nursery areas of important aquatic species on etc. list 4) discharges of effluents into waterways should meet all regs and would not adversely effort efforts to meet WQ objectives 5) There would be no preemption of or adverse effects on land specially designated for environmental, recreational or other special purposes. [Harris Lake Park, Jordan Lake] 6) No potential significant impact on terrestrial and aquatic ecosystems, including wetland, which are unique to the resource area 7) population density and numbers conform to 10.CFR.100 8) There are no other significant issues that affect costs by more than 5% or that preclude the use of the site. (0028-96 [Cullington, Liz])

**Comment:** (p.9-53) PEC says that "The HAR site has minimal transmission impact costs for the installation of an 1100 megawatt (MW) nuclear unit." But what about two? Elsewhere in the ER PEC states that an additional switchyard would need to be built for HAR-3 and both reactors would require seven or eight new transmission lines, and even if they parallel existing lines, additional ROWs would need to be purchased. (0028-99 [Cullington, Liz])

**Response:** *The applicant performed a site-by-site comparison of alternative sites with the proposed site to determine if there were any alternative sites environmentally preferable to the proposed site. Not all possible alternative sites were considered, just a "reasonable" subset of possible alternatives. The review process involved the two-part sequential test outlined in NUREG-1555. The first stage of the review used reconnaissance-level information to determine whether there were environmentally preferable sites among the alternatives. If environmentally preferable sites were identified, the second stage of the review considered economics, technology, and institutional factors for the environmentally preferred sites to see if any of these sites was obviously superior to the proposed site. Using both quantified and qualified data in review of the alternative and proposed site selection process, Chapter 9 of the EIS will address the systematic analysis and selection of the proposed site and each specific alternative.*

**Comment:** (page 9-59) PE says environmental justice not an issue at the Marion SC site (therefore presumably not at any site because no significant impacts on any human populations are expected to occur. Proximity to any large industrial facility is a negative sociological impact. (0028-103 [Cullington, Liz])

**Response:** *Environmental justice analysis in a NRC EIS deals with disproportionate environmental impact on low-income and minority communities including socioeconomic impact. NRC staff will analyze socioeconomic impacts from both a regional and an environmental justice perspective in Chapters 4 and 5 of the EIS. Reconnaissance-level information on potential environmental justice impacts will be collected as part of the examination of alternative sites.*

**Comment:** (p. 9-75) 9.3.2.3 Evaluation of Population Density for Alternative Sites. The NRC Standard Review Plan, NUREG-0800, Section 2.1.III.5, notes that if the population density of the proposed site exceeds, but is not well in excess of 500 people per square mile (PPSM) over a radial distance out to 32 km (20 mi) then the analysis of alternative sites should evaluate alternative sites having lower population density. The underlying regulation for this guidance is 10 CFR 100.21(h), which states: Reactor sites should be located away from very densely populated centers. Areas of low population density are, generally preferred. However, in determining the acceptability of a particular site located away from a very densely populated center but not in an area of low density, consideration will be given to safety, environmental, economic, or other factors, which may result in the site being found acceptable. Given that PEC has not provided the NRC with alternative viable sites for comparison, it is also the case that the Harris site, with its dense population, does not offer significant safety or environmental benefits, and it appears that none of its nuclear sites are in fact really suitable for additional reactors. (One has lots of water but is awfully close to sea level, one has water supply issues, and one has water supply problems and too few people.) Since PEC apparently is not interested in expanding at the Brunswick site at this time, they don't bother to describe whether or not there is land at a greater elevation than 20 ft above sea level anywhere in the vicinity. It is good enough in Levy County Florida for a site to be near water, provided a channel is dug. PE claims that 2000 density for 0-32 km/0-20 mi radius is 383 ppsm. But Projections estimate a population density of 511 ppsm in 2010 and 574 in 2015 (before the new plants come on line) and they don't bother citing population density for the many decades of operation. PE cites as compensatory factors, proximity to load (which is actually a function of dense population), adequate water supply (which we find is not the case) and factors that should apply to all viable sites, available land and



minimal environmental impact. But then PEC claims safety considerations which turns out to be the AP1000 design, not particular to this site or any other. (0028-120 [Cullington, Liz])

*Response: Examination of several demographic segments of the population will be provided in Chapter 2 of the EIS. Population projections will be presented and will reference the best available sources of information. Reconnaissance-level information regarding population density will be collected as part of the review of alternative sites. All applicable regulatory guidance will be followed in the examination of alternative sites and in the preparation of the EIS.*

## **27. Comments Concerning Benefit – Cost Balance**

**Comment:** There are numerous reasons that Progress Energy and Duke Energy insisted that our legislature, last summer, transfer the risk for new nuclear power plants to the rate payers. The main reason is, they are very concerned, they realize that projects, if they get them started, they could fail in midstream for a number of reasons. (0001-45 [Warren, Jim])

**Comment:** You're looking at three or \$4,000 per person for the reactors. You have to also look at what the federal subsidies. The energy bill that got shot down this week was looking at five hundred billion dollars worth of subsidies to the nuclear power plants. That's another couple thousand dollars to add on to this. So you're looking at -- you're getting up there over the next decade of people spending quite a lot of their money. I think there was stickers out there on the Progress Energy table that says nuclear equals clean air. I think it's going to be clean air because people are not going to be able to afford to run their automobiles because the price of the nuclear power plants are going to be so expensive, people are not going to be able to afford gasoline. (0001-83 [Runkle, John D.]

**Comment:** Even if two new reactors in Wake County were actually part of a solution to global warming, then we would still have to consider ... the effect of putting an additional five to 20 billion dollar debt onto North Carolina and South Carolina rate payers who are losing their jobs in batches of several hundred to a thousand at a time, and seemingly every week. (0002-65 [Cullington, Liz])

**Comment:** It seems to me that there should be an accounting of the total costs of the proposed action, whether borne by ratepayers or taxpayers. As ratepayers, we would pay higher electricity bills to cover construction of the plant. As taxpayers, we would pay the DOE to store the nuclear waste and to help Progress construct the plant with through financial incentives, and the NRC to monitor the safety of the plant. We also would pay higher taxes to cover impacts to roads by cars and trucks associated with the plant, increased costs of schools, etc. When describing costs of the proposed action and alternatives, please look at the total costs, and include these in the total price per kwh. I'd hate to think that we're saving 5 cents per kwh for electricity, but paying an extra 10 cents per kwh in taxes. (0010-17 [Keto, Evan])

**Comment:** I don't think you can count the taxes created by a nuclear power plant to be a benefit of the plant. Those taxes come from people paying their electrical bills. Instead of going into the bank or to put better insulation on their houses to reduce their total

energy costs, it is going to local and state government to offset the impacts of the nuclear plant on local roads and schools. In a way, the proposed action might be raising taxes, not lowering them. Please be clear to state what the total costs and benefits are of the proposed action, and any negative costs that are created by apparent benefits. (0010-21 [Keto, Evan])

**Comment:** 10.3.2.9.4 Tax revenue and economic characteristics. The beneficial impacts of some extra jobs is not offset by the state's many road costs (road improvements for extra traffic, and road relocation), local school costs, and most importantly, the increase in electric rates for all sectors of the local economy from two new reactors, which PEC fails to mention anywhere in its ER (0028-227 [Cullington, Liz])

**Comment:** PEC states that "The project stimulates economic growth and productivity in the local area." However, two new reactors will increase electric rates which will make the area less competitive, and could put the final nail in the coffin of any local business that has survived the rise in transportation costs. This impact could be greatest on small businesses (0028-241 [Cullington, Liz])

**Response:** *The purpose of the EIS is to disclose potential environmental impacts of building and operating of the proposed nuclear power plant. Neither the determination of the impact of building and operating a nuclear power plant on retail power rates, nor the impacts such potential rate changes may cause, is under NRC's regulatory purview and therefore these comments will not be considered further.*

**Comment:** [N]uclear cost estimates have skyrocketed. They're some six times higher -- five to six times higher than they were just a few years ago. I would encourage you elected officials to answer the question, are you willing to be the ones to endorse massive, billions of dollars of subsidies -- at the federal, state, and local level too, because they are going to come to you there too -- subsidies for these plants? Or will you endorse a free market solution to our energy challenges? (0001-44 [Warren, Jim])

**Comment:** The industry also has insisted that the public, the taxpayers insure new reactors. So that when they tell us that the new designs are safer than ever, you have to see that that really is countered by what they're actually doing in Congress. (0001-47 [Warren, Jim])

**Comment:** I don't think the plants are going to get built. If you look at the price of nuclear power plants, each of these reactors will cost six to ten billion dollars. Any kind of Environmental Impact Statement that looks at the cost of those reactors and compares it to alternative sources of energy is going to have to show that it's not cost effective to build these nuclear power plants. (0001-80 [Runkle, John D.]

**Comment:** [N]uclear power plants would not be built if it weren't for the subsidies from the government, and you know the tax payers are basically holding it up. Wall Street is not behind it. They're not going to loan money for any nuclear power plant, unless it's backed up by the government. (0002-89 [Schwankl, Audrey])

**Comment:** It's going to take ten, 15, 20 years to get this thing on line. And it may stop in the middle. It may not even come to completion. And all the money that has going into it is going to be paid by the folks that are paying their electric bills. It's just going to be a

huge economic burden, a billion dollar loss for our economy. (0002-90 [Schwankl, Audrey])

**Comment:** Cost estimates have risen six-fold since 2002 - now \$7 to 12 billion dollars per reactor - and would go higher if one is ever completed. The nuclear industry insists taxpayers pay billions in subsidies for new plants, and Wall Street won't finance them without 100% taxpayer backing, due to risk of cancellation. (0008-3 [Turk, Lawrence "Butch"])

**Comment:** New projects could fail in midstream for numerous reasons, as happened with scores of U.S. plants in the 1980s - including nine by Progress Energy and Duke Energy. That's why in 2007, those companies and their NC legislative allies transferred to the public tens of billions of dollars in risk for new plants. A severe accident or attack at any plant, design flaws, construction delays, or market changes could cause new projects to fail, leaving customers with the bill. (0008-4 [Turk, Lawrence "Butch"])

**Comment:** The main restriction, I have heard, facing these technologies and small businesses is not cost or efficiency or environmental impact, but access to the transmission system. People would like to get paid for the energy on their properties, but are excluded from the market. It seems to me that approving 2000 mw of nuclear power will not help these folks get connected. It would, in all likelihood, lead people to believe that our energy problems are solved, and delay any progress in opening the electricity market to small businesses. (0010-9 [Keto, Evan])

**Comment:** Once again the land use no-change argument is raised when in fact 4,055 acres would be flooded and much privately owned land forcibly taken for new transmission lines. Estimated costs of transmission upgrades for the HAR site were evaluated as negligible. Or one million, whichever is less. Also the HAR site has other applicable considerations related to PEC's business plans. This presumably is connection to high voltage transmission line connections to Richmond, VA and points north, and other factors that are not positives for the environment, the neighbors, or the ratepayers. (0028-122 [Cullington, Liz])

**Comment:** This entire section fails to accurately summarize even those few negative impacts that are listed elsewhere in the ER, let alone those that can be inferred. What has occupied many pages is either omitted or reduced to a phrase. On the other hand the applicant really goes to town in dredging up hypothetical economic benefits. (0028-138 [Cullington, Liz])

**Response:** *These comments provide general information in opposition to nuclear power. They do not provide any specific information relating to the environmental effects of the proposed action and will not be evaluated in the EIS.*

**Comment:** Two years ago industry estimates targeted the cost for building new commercial reactors in the U.S. at 2000 per kilowatt hour. Earlier this year Progress Energy pegged it's estimates for building two new units in Florida at around 14 billion, plus three billion for transmission and distribution, which is about twice the kilowatt hour estimate promised just two years ago. In October Moody's Investor Service published a report titled New Nuclear Generation in the United States. The report estimated the total cost for a new commercial reactor including interest would be between 5,000 and \$6,000 per kilowatt hour. But Moody stated that those numbers are only guesses. Quote, we

believe the ultimate costs associated with building new nuclear generation do not exist today. And that the current cost estimates represent best estimates which are subject to change. End quote. Some estimates report that operating cost on a per kilowatt hour basis for a new commercial nuclear plant will be 30 cents per kilowatt hour for perhaps 12 years until the construction cost are paid off, at which point the operating cost could drop to around 18 cents. In contrast, concentrated solar and wind power can be built for about 14 cents per kilowatt hour, and can drop further through economies of scale. Today, as a residential rate payer, I pay Progress Energy around nine cents per kilowatt hour. The reality is that the cost of any nuclear power plant won't be known until it actually comes on line. (0001-98 [Crandall, Van])

**Comment:** Present costs for a new nuclear reactor in Florida are projected to be seven billion dollars, and costs for a future plant will undoubtedly be higher and passed on to consumers. (0004-2 [Blackburn, Jeanne])

**Comment:** As far as I know, uranium is a mineral resource with a finite supply, and which will increase in price over time, as the best resources are extracted and we move to lower-grade resources. As gas and diesel prices increase, won't it cost more to extract, refine, and transport uranium? Given these factors and an increasing demand on uranium from a predicted nuclear renaissance, what effect will the demand-adjusted costs of extracting, processing, and transporting uranium have on electricity prices? (0010-28 [Keto, Evan])

**Comment:** Since these guards and monitors will need salaries, this represents a long term cost that will exist long after these plants have been decommissioned. What are the total prorated costs of the additional security and managerial forces needed to oversee the nuclear waste that will be produced by the proposed facilities? How many total manhours will this vigilance require, projecting out 10,000 years? What is the value of this time at current minimum wage rates? How does this compare to alternatives not requiring continuing long-term security for waste products? Additionally, what are the costs of constructing a long-term waste storage facility, and what are the prorated costs associated with these two plants, assuming that they operate for 40 years each at full power? How does this affect the per-kwh price of electricity that will be borne by us not as ratepayers, but as taxpayers? (0010-33 [Keto, Evan])

**Comment:** The NRC cannot possibly accept the cost of a new AP1000 design nuclear plant (and associated costs as described in the Environmental Report) as a mere \$2.2 billion, when the costs of the same plants in Levy County, Florida has been submitted by Progress Energy-Florida to Florida state regulators at \$8.5 billion each. The contract with Westinghouse alone for those Florida reactors is \$3.45 billion per reactor. Now it appears that until the resolution of design issues even those escalating costs are not a reliable guide to future costs. (0022-10 [Bonitz, John] [Cullington, Liz] [Dukes, Patty] [Eads, Don] [Ellison, Margie] [King, Ed] [Meyer, Nick] [Royal, Lil] [Schwankl, Audrey] [Schwankl, Jimmy])

**Comment:** However, the lack of any reasonable cost basis, or floor, means that there can be no reasonable analysis of comparative sources of energy generation or energy management strategies, either alone or in combination with sustainable renewable energy sources. Preparation of an EIS cannot proceed without a realistic cost estimate, and should include an alternative that utilizes a more comprehensive slate of available efficiency measures by customers of all classes. (0022-11 [Bonitz, John] [Cullington, Liz])

[Dukes, Patty] [Eads, Don] [Ellison, Margie] [King, Ed] [Meyer, Nick] [Royal, Lil]  
[Schwankl, Audrey] [Schwankl, Jimmy])

**Comment:** Secondly, the extent of the proposed revisions means that cost projections are virtually impossible until these design issues are resolved. Without a reasonable cost basis neither EIS scoping nor preparation can be done. (0022-3 [Bonitz, John] [Cullington, Liz] [Dukes, Patty] [Eads, Don] [Ellison, Margie] [King, Ed] [Meyer, Nick] [Royal, Lil] [Schwankl, Audrey] [Schwankl, Jimmy])

**Comment:** One of the most significant areas of deficiency in the Environmental Report is the lack of a realistic cost estimate for the two new nuclear plants and the associated construction and operational activities and costs that are scattered about the text or tables, either stated or by inference. Instead Progress Energy has created an estimate based on old reports that is totally inadequate and in conflict with estimates for identical design plants currently proposed by other utilities, including Progress Energy in Florida. (0022-9 [Bonitz, John] [Cullington, Liz] [Dukes, Patty] [Eads, Don] [Ellison, Margie] [King, Ed] [Meyer, Nick] [Royal, Lil] [Schwankl, Audrey] [Schwankl, Jimmy])

**Comment:** 10.2.2.1 Construction Materials. The amounts and types of material required should be comparable to those that would be necessary for the construction of any type of power plant.... including materials such as concrete, steel and other metals, glass and several forms of plastics.... This is totally wrong. A nuclear reactor and associated construction would require the irreversible commitment of considerably more materials than even a large coal plant, and a great deal more than would be required for the wind/solar/gas alternative. But more importantly, a nuclear plant alone would require the use of many rare and expensive metals not required by the other alternatives, and not just in construction, but in the fabrication of fuel. In addition it is only a nuclear plant that would render those metals, useless for any form of future reclamation, creating irradiated metal parts and reactor fuel cladding that must be disposed of as High Level Waste or Class C waste, etc., and isolated for tens of thousands of years or longer to prevent human scavenging. (0028-185 [Cullington, Liz])

**Comment:** 10.4.2.1 PEC is using for a cost estimate for two new AP1000 reactors, four studies referenced as 10.4.004-10.4.007, from U of Chicago, MIT, EIA, OECD. The four studies identified ... estimate overnight capital costs that range from \$1100 per kilowatt ... to \$2300 per kW, with \$1500 to \$2000 per kW being the most representative range. ... The estimates are not based on nuclear plant construction experience in this country, which is more than 20-years old. Actual construction costs overseas have been less than most recent domestic construction, [so PEC elects to use this wider data field to skew its estimate downward] suggesting that the industry has learned from the domestic experience. This is going an awfully long way around to avoid talking about the fact that there are already cost estimates for other AP1000 projects, in the USA, which are 3 to 4 times the estimate that PEC is using. Progress Energy-Florida (PEF) was required to submit costs to state regulators in Florida and PEF projected a cost of \$17 billion for two AP1000 reactors (\$8,500 per kW). \$2-3 billion of this was stated to be transmission costs. See here:

[http://www.sptimes.com/2008/03/11/Business/Price\\_triples\\_for\\_Pro.shtml](http://www.sptimes.com/2008/03/11/Business/Price_triples_for_Pro.shtml) Transmission costs at the Harris site are not so much lower as to justify using a \$2.2 billion estimate pulled out of old and inapplicable projections. The value of the contract PE has signed with Westinhouse/Toshiba is more than that, \$3.45 billion per reactor:

<http://www.reuters.com/article/marketsNews/idUST1817920080410> UPDATE 1-Toshiba

eyes \$6.9 bln Progress Energy order Wed Apr 9, 2008 11:54pm EDT TOKYO, April 10 (Reuters) -Toshiba Corp (6502.T: Quote, Profile, Research, Stock Buzz) said on Thursday its Westinghouse unit is in talks to build two nuclear reactors in Florida for Progress Energy Inc (PGN.N: Quote, Profile, Research, Stock Buzz), in a deal estimated to be worth 700 billion yen (\$6.9 billion). Along with other projects Toshiba is finalising, the Progress Energy deal would raise the value of nuclear orders Toshiba could win in the United States to roughly 2.8 trillion yen. Progress Energy signed a letter of intent with Westinghouse Electric Co and Shaw Group Inc's (SGR.N: Quote, Profile, Research, Stock Buzz) Power Group to buy key components for up to two reactors, Reuters reported on Monday. [ID:nWNAS7024] Other estimates have been even higher: Nuclear Cost Estimates, By Pam Radtke Russell, June 23, 2008 [http://www.energycentral.com/centers/energybiz/ebi\\_detail.cfm?id=525](http://www.energycentral.com/centers/energybiz/ebi_detail.cfm?id=525) (0028-242 [Cullington, Liz])

**Comment:** 10.4.2.4 External costs. (p.10-75) How curious that PE is available to come up with cost estimates for cooling towers, road reconstruction, transmission lines and so on, but NOT THE COST OF THE TWO NUCLEAR PLANTS! Rough order of magnitude costs for road amendments just due to the flooding is \$20 million. Plus \$6 million for protecting the the area at the Harris Training Facility, and for new switchyard, parking, roads inside facility, \$18 million. These are NOT EXTERNALIZED COSTS and need to be factored in by PEC to an actual, realistic cost estimate for two new reactors. Yet even these costs are apparently not remotely accurate since they may not include actual labor and material cost, competitive market conditions, implementation schedule and other variable factors. PEC nowhere mentions the value of the land that they own that would be pulled into the rate base if these two new nuclear plants are built, because that could be equivalent to land purchased for transmission or generation etc., in added cost, and should be part of the comparative cost analysis with other alternative strategies and sources. (0028-243 [Cullington, Liz])

**Comment:** Although the text of the summary (Section 10.4.3) says that the table includes mitigation measures, and the costs of various impacts, after mitigation measures, this is not true. The table includes no costing for impacts, and no costs for most mitigation measures (unless you count roadway raising and such). (0028-245 [Cullington, Liz])

**Comment:** (p.10-85) Sheet 7: "Using the capital cost estimate value of \$2000 per kW results in a HAR per unit construction cost of approximately \$2.2 billion." This is totally unreasonable. See my comments above on cost estimate. It is not clear at this time if PEF's Levy County site will use cooling towers, but it will involve a new channel for ocean cooling water. On the other hand, at the Harris site, there are numerous things that have to be demolished and rebuilt that are potentially additional costs not involved in PEFs Levy County project. (0028-251 [Cullington, Liz])

**Comment:** Sheet 8: PEC lists a \$1 million transmission line cost for each new unit, this seems artificially low. (0028-252 [Cullington, Liz])

**Comment:** (p. 10-87) Sheet 9: PEC gives an anticipated operating cost of 3.1 - 4.6 cents per kWh. Of course of more interest in comparing with alternative sources and strategies is busbar cost. What uranium price is this operating cost based on? Operating cost needs to include future dollar pricing taking into account rises in uranium price, increased energy prices for fuel fabrication and transport and rise in all applicable

operating costs. Even if the NRC is not going to require pricing to predict 2018 to 2078 pricing (60 year operation), PE must be required to accurately project start up date operating costs, not costs that are many years old a decade before start up. (0028-253 [Cullington, Liz])

**Comment:** New roads (see figure 4.0-11). Several new asphalt-paved roads will be constructed prior to HAR construction. All the road portions on PEC land would be additional undeclared costs of the reactors. (0028-7 [Cullington, Liz])

**Response:** *The disclosure of the costs of the proposed action will rely on the best available estimate of financial costs with uncertainties noted. Associated costs that cannot be reliably quantified also will be discussed. Chapter 10 of the EIS will discuss the estimated overall internal and external benefits, costs, and associated environmental impacts of the proposed project.*

**Comment:** The nuclear plant itself has to be manufactured, the waste has to be cooled, processed, shipped, and isolated. The entire business would only start actually becoming carbon neutral in about 20 years, which would be in 2038 at the very earliest. Many other countries, however, are also planning new nuclear plants. Since there's not enough viable uranium for all of these planned nuclear plants, this means the U.S. nuclear plants might in fact be carbon neutral, and they're certainly going to be more expensive to operate. (0002-67 [Cullington, Liz])

**Comment:** And as far as lowest cost, when we're talking about the waste that is produced by these nuclear power plants, we have to come up with the money to store this stuff for eternity. That's not low cost. That's the most expensive kind of power that could ever possibly be produced. (0002-91 [Schwankl, Audrey])

**Comment:** As for materials and energy use, PE states that the new reactors provide far more energy than is consumed in their construction. This assumption has been shown to be essentially not true when everything is taken into consideration, and isolation of the long lived waste is included. Plus it would not be true for the first 20 years no matter what assumptions you use. (0028-240 [Cullington, Liz])

**Response:** *The NRC staff will evaluate the environmental impacts of the uranium fuel cycle including the impacts of fuel manufacturing, transportation, and the onsite storage and eventual disposal of spent fuel. The EIS will discuss the estimated overall costs and environmental impacts of the proposed project. The benefit-cost balance for the project will rely on the best available estimates of project timing and duration, while noting possible uncertainties that may affect those estimates. These comments do not provide new information and will not be evaluated further.*

**Comment:** There is totally confusing terminology regarding geography. For instance, plant site is the area within the current EAB/fence line but HAR site includes that plus Harris Reservoir and its perimeter and dam, the proposed pipeline structure etc. The use of the word site to describe this larger area in this section, the ER and in other contexts tends to create the (possibly desired) impression that the new reactors are to be constructed on the footprint of the originally planned additional reactors. Most people would understand site to mean a much smaller area than the current EAB, and certainly not to encompass Harris Lake and its surrounds, and a location some distance away on the Cape Fear River, and to be more akin to construction site. The applicant should be

required to adopt clearer terminology identify among other things: SHNPP site: The area encompassing the current reactor (Harris 1) footprint including reactor, turbine building, fuel handling building, switchyard SHNPP EAB: The exclusion zone around the current reactor and the area within it Harris Lake: the area currently consisting of two impoundments, a northern smaller impoundment (Auxiliary Reservoir) at 240 ft elev., and a larger impoundment (Main Reservoir) at 220 ft, Harris Lake Perimeter: the current and future perimeter of both impoundments HAR 2 site [see SHNPP site] HAR 3 site [see SHNPP site] HAR 2 EAB [see SHNPP EAB] HAR 3 EAB [see SHNPP EAB] Harris Nuclear Facilities and Lake: the future area of Harris 1 HAR 2 and HAR 3, their EAB(s), the visitor center/lab building, and Harris Lake and perimeter. Current definitions are completely mad: for instance the Harris Reservoir Perimeter is the area that will be flooded. But there is a current perimeter and then there is a future perimeter. Transmission corridors If PE is claiming that no new transmission corridors will be needed, just widening of existing ones, why does this definition include new transmission corridors. New transmission corridors need to be clearly identified now and throughout the ER. Why is the vicinity only 6 miles? What about the 10 mile radius area? (0028-139 [Cullington, Liz])

**Response:** *The EIS will discuss potential environmental impacts in a geographic context. That context begins with the immediate site and includes all areas directly affected by the applicant's proposed action. The next level of analysis applies to the "vicinity," which is the area within 10 km (6 miles) of the planned reactor center point. The widest area of analysis is the "region," which is the area within 80 km (50 miles) of the reactor center point.*

**Comment:** The industry insists that taxpayers insure new reactors, belying their claim about new designs being safer. Federal studies (e.g. 1997 Brookhaven National Lab) show that accidents could cost a half-trillion dollars in off-site damage. (0008-6 [Turk, Lawrence "Butch"])

**Comment:** Curious that this section and ER only considers the construction (and regular operation) of two new reactors, but not the destruction of one or both. Since this section is supposed to be a summary of all the costs and benefits of previous chapters, why is there no discussion of the unavoidable environmental impacts of both design basis accidents and beyond design basis accidents. This is a draft EIS after all. It should face facts. Though of course with a reactor design with no operational history, fact are somewhat thin on the ground. Nevertheless the economic impacts of a core meltdown could far outweigh the largest economic benefit, additional property taxes to Wake County. (0028-140 [Cullington, Liz])

**Response:** *The effects of accidents will be considered in both environmental and safety reviews. Postulated accidents, including design-based and severe accidents, will be addressed in Chapter 5 of the EIS.*

## **28. General Comments in Support of the Licensing Action**

**Comment:** CAS Energy Coalition wholly supports Progress Energy in their application for the second and third reactors at the Shearon Harris site. (0001-125 [Hummel, Bill])



**Comment:** I will say that we are confident that these reviews, and we appreciate the feedback, will conclude that the licensing application is sound, and it provides the needed options to serve the energy for our community. (0001-28 [Pinnix-Ragland, Hilda])

**Comment:** I am in favor of seeing the process of the new reactors to continue... (0001-29 [Griffin, Eric])

**Comment:** I do look forward to seeing this project with the new reactors go through if the need still remains at the time of the construction process. (0001-33 [Griffin, Eric])

**Comment:** [W]e strongly believe that an expansion is in the best interest of the continued prosperity of central North Carolina. (0001-42 [Joyce, Bob])

**Comment:** We believe that Progress Energy has also made a commitment to energy efficiency through its balanced solutions strategy. By planning now, we can accommodate the needs of the future. I would also ask the commission to consider the importance of these new power sources and positively respond to the Progress Energy application. (0001-79 [Rupprecht, Diane])

**Comment:** We [The Clean and Safe Energy Coalition] support the construction of new reactors at Shearon Harris by Progress Energy. (0002-102 [Cann-Woode, Nina])

**Comment:** [T]he CAS Energy Coalition wholly supports Progress Energy in their application for additional reactors. (0002-111 [Hummel, Bill])

**Comment:** Expansion of nuclear units at an existing site may be the only option to provide significant generation. (0002-22 [Ragsdale, Lee])

**Comment:** North Carolina Electric Membership Corporation is a wholesale customer of Progress Energy Carolinas. The Harris Plant is an important part of Progress Energy's energy resources. Providing for the option of expanding that site with additional generation units is prudent in today's global environment of rising energy costs and environmental sensitivity allows for the continuation of emission-free reliable power at the lowest possible costs to the citizens of North Carolina, including our membership. (0002-24 [Ragsdale, Lee])

**Comment:** We support the possible expansion of the Harris Plant and encourage the Nuclear Regulatory Commission to take the steps necessary to allow Progress Energy to move forward in this planning process. (0002-26 [Ragsdale, Lee])

**Comment:** I believe more nuclear capacity is good public policy and I certainly support this combined license application. (0002-46 [Fain, Jim])

**Comment:** In order for us to maintain a balanced solution where we utilize alternative energy, efficiency, and state of the art power plants, Harris 2 and 3 play a key role in order to allow Progress Energy to help secure our energy future. (0002-48 [Weintraub, Sasha])

**Comment:** So we really rely on power companies to provide us energy when we need it, on demand, and I believe we need to give our energy companies the tools and flexibility they need to meet that demand for us. (0002-53 [Badrock, Anita])

**Comment:** I would support Progress Energy's application. (0002-57 [Badrock, Anita])

**Comment:** We [Wake County Economic Development] are here in support of Progress Energy's application for two new reactors at the Shearon Harris site. (0002-6 [Sauls, James])

**Comment:** Based on this community's need for sustained growth with a movement away from coal and oil, and my knowledge of Progress Energy as a Raleigh based company, I would ask that the commission support the application by Progress Energy. (0002-99 [Cammarata, Sal])

**Comment:** As a citizen of Raleigh, North Carolina, I urge you to approve the expansion of the nuclear power plants in our state. (0003-1 [Flythe, Jim])

**Comment:** The North Carolina Chamber supports Progress Energy's application to the NRC for two new reactors at the Harris site in Wake County. (0006-1 [Ebert, S. Lewis])

**Comment:** I urge you to approve the development and construction of much needed nuclear facilities as soon as possible. (0007-1 [Adams, C.A.])

**Comment:** On behalf of the Greater Raleigh Chamber of Commerce, I would urge you to support Progress Energy's request before you. (0009-1 [Moretz, Drew])

**Comment:** We encourage you to support this request to allow Progress Energy to continue to supply our region with our growing energy needs and encourage you to support their applications. (0009-4 [Moretz, Drew])

**Comment:** [I] urge you to support both the license renewal process for existing nuclear plants as well as to work to put policies in place to support building new plants. (0011-2 [Modeen, Jessica])

**Comment:** My wife and I hereby proved a positive Yes vote for the addition of nuclear plants to the Harris site. (0013-2 [Woodard, Carl H. and Sandra J.])

**Comment:** Supplementing Harris Lake with waters from the Cape Fear River and with enough scientists from our universities and Research Triangle Park to rally public acceptance, all we need is you. (0014-2 [Susann, Marian])

**Comment:** I would like to go on record in support of the licensing of new units by Progress Energy. (0017-1 [Smelcer, Donald])

**Comment:** I am in favor of the proposed reactors at the Shearon Harris site. (0018-1 [Maher, Jim])

**Comment:** [T]he Town of Apex fully supports Progress Energy's efforts to expand the electric power production of the Harris Plant. This expansion is essential for meeting

future energy demands and will surely enhance the economic development of our community. (0020-1 [Radford, Bruce])

**Comment:** NOW, THEREFORE, LET IT BE RESOLVED that the Wake County Board of Commissioners expresses its support to the NRC of Progress Energy's application process to build two new reactors. (0030-5 [Bryan, Joe])

*Response: These comments provide general information in support of the applicant's combined license (COL) and will not be evaluated further.*

## **29. General Comments in Support of the Licensing Process**

**Comment:** For 20 years, Shearon Harris Plant has helped provide us with reliable electrical energy. Progress Energy has shown its ability to operate a facility safely and efficiently. They're now seeking permission to construct the two new reactors. There's a lot to be done before they will get there. We appreciate and understand the process. We appreciate their ability to move forward in this process. We just encourage you to consider their application and to allow them to move forward. (0001-72 [Winters, Mike])

**Comment:** I appreciate also the NRC holding this hearing and allowing the general public to have some input in this process. (0001-73 [Herts, Bob])

**Comment:** I urge you to expedite this process and allow Progress to address all those issues that are raised through the NEPA process as well as issues raised by the general public, and that you go ahead then and issue this combined license to Progress Energy. (0001-77 [Herts, Bob])

*Response: These comments provide general information in support of the NRC COL process and will not be evaluated in the EIS.*

## **30. General Comments of Support of Nuclear Power**

**Comment:** [The Clean and Safe Energy Coalition] are actively engaged in generating a public dialogue to educate others about the ways nuclear power enhances America's energy security and economic growth, and helps improve the environment. (0001-105 [Cann-Woode, Nina])

**Comment:** [I]t is important to recognize that nuclear power plants have a proven record for performance in severe weather conditions, including drought. Given extreme temperatures, it will continue to operate safely. In fact, nuclear plants here in the southeast were critical to meeting electricity demand during a two-week heat wave in August of last year, and posted an average daily capacity factor of more than 98 percent. (0001-107 [Cann-Woode, Nina])

**Comment:** However, as we look down the road, we should promote an increase in the use of nuclear energy as an environmentally clean and reliable path in meeting our country's energy needs. (0001-119 [Hummel, Bill])

**Comment:** Nuclear energy is clean. It is the only large scale emissions free source of electricity that we can readily expand to meet our growing energy demands. The

environmental impact of nuclear plants is far lower than many other types of power generating plants. (0001-120 [Hummel, Bill])

**Comment:** Nuclear energy is safe. In fact, the United States Bureau of Labor Statistics has shown that it is safer to work at a nuclear power plant than in the manufacturing sector and even in the real estate and financial institutions and industries. (0001-121 [Hummel, Bill])

**Comment:** With the rising energy costs a concern for every American nuclear energy is an affordable and reliable economic choice for electricity. Nuclear power has the lowest production costs of the major sources of electricity. Nuclear plants are the most efficient on the energy grid and their costs are more predictable than many other energy sources. (0001-123 [Hummel, Bill])

**Comment:** We see that nuclear is a part of that, because it is very low carbon. (0001-21 [Pinnix-Ragland, Hilda])

**Comment:** It's our position that nuclear energy, operated safely and efficiently, is the best option for reliable and affordable energy, which is also clean, low carbon energy. (0001-34 [Joyce, Bob])

**Comment:** We need the new generation capability along with all of the other things that have been talked about because of what is going on in this area. I believe that nuclear energy is the best option for the low-carbon, long-term, reliable, and I believe affordable energy. (0001-76 [Herts, Bob])

**Comment:** We [The Clean and Save Energy Coalition] and are actively engaged in generating a public dialogue to educate others about the ways nuclear power enhances American's energy security and economic growth, and helps improve the environment. (0002-103 [Cann-Woode, Nina])

**Comment:** As we approach the hot summer months, it is important to recognize that nuclear power plants have a proven record for performance in severe weather conditions, including drought. Given extreme temperatures, it will continue to operate safely. In fact, nuclear plants here in the southeast were critical to meeting electricity demand during a two-week heat wave in August of last year, and posted an average daily capacity factor of more than 98 percent. (0002-105 [Cann-Woode, Nina])

**Comment:** Now is the time for our country to support nuclear energy as a means to generate electricity with a clean, safe, and dependable source of power. (0002-106 [Cann-Woode, Nina])

**Comment:** Nuclear already provides 20 percent of the United States electricity, and with electricity demands expected to increase by 25 percent nationally by 2030, the United States needs more nuclear energy if it wants to keep up with our growing energy needs. Conservation alone won't meet our growing needs. A diverse mix of energy sources will serve us all best. However, as we look down the road, we should promote an increase in the use of nuclear energy as it is environmentally clean and a reliable path to take in meeting our country's energy needs. Nuclear energy is clean. The environmental impact of nuclear plants is far lower than many other types of power generating plants. Nuclear energy is safe. (0002-107 [Hummel, Bill])

**Comment:** With rising energy costs a concern for every American, nuclear energy is an affordable and reliable economic choice for electricity. Nuclear power has the lowest production costs of all the major sources of electricity. Nuclear plants are the most efficient on the electrical grid, and their costs are more predictable than many other energy sources. (0002-109 [Hummel, Bill])

**Comment:** North Carolina's electric cooperatives believe nuclear power is a viable and practical option. (0002-21 [Ragsdale, Lee])

**Comment:** [C]oncerns regarding carbon emission make nuclear an even more attractive option for base load power. (0002-23 [Ragsdale, Lee])

**Comment:** In a broader context, nuclear power is essential to a balanced portfolio for any energy company, and North Carolina Electric Membership Corporation has an interest in a nuclear plant, as well as supports the continuation and development of nuclear resources in the state. (0002-25 [Ragsdale, Lee])

**Comment:** [A]n appropriate proportion of nuclear generation in our electric power mix is important to meet the growing needs of both employers and the expectations that citizens have for air quality. (0002-40 [Fain, Jim])

**Comment:** [N]uclear power must be an important part of the base load mix. In my opinion, it's an excellent vehicle for accomplishing efficient generation of power, certainly at base load scale, in reducing our carbon foot print. Coupled with conservation, in a realistic mix of renewable and other forms of generation, nuclear power helps support our growth, reduce carbon and other emissions, and achieve our national objective of energy self-sufficiency. (0002-45 [Fain, Jim])

**Comment:** I am happy to say that after 30 years of studying, our family came from a position of complete opposition to nuclear energy, to become a family that thinks that nuclear energy should deserve a seat at the table when we talk about our energy needs for this century and beyond. (0002-49 [Badrock, Anita])

**Comment:** [W]e believe that a nuclear power plant has to be part of the discussion when we look at the future. (0002-51 [Badrock, Anita])

**Comment:** [W]e really need to keep our options open, and that includes keeping nuclear energy on the table. If it's done right it has the potential to keep the cost of electricity down, gives expanded and reliable capacity to meet the needs that we have in our community, and we can limit harmful green house emissions. (0002-55 [Badrock, Anita])

**Comment:** I don't want global warming. I would like to do something about that. I think the nuclear business is the way to do that. (0002-94 [Funderlic, Bob])

**Comment:** How can we sustain our growth while at the same time reduce our dependence on oil and coal? I believe that nuclear power is the most cost effective means, and one that has proven to be also safe. (0002-97 [Cammarata, Sal])

**Comment:** Nuclear power plants have a wonderful track record. (0003-2 [Flythe, Jim])

**Comment:** We need more electrical capacity. Nuclear power is cheaper, safer, and cleaner and has less environmental impact. North Carolina needs energy and less dependence on oil. Nuclear Energy will help our economy. (0003-3 [Flythe, Jim])

**Comment:** A thoughtful, balanced approach to the energy supply is essential to sustain and grow the state's economy, and the expansion of nuclear power is consistent with this approach. (0006-2 [Ebert, S. Lewis])

**Comment:** We support Progress Energy's COL application because nuclear is the best option for low-carbon, large-scale reliable and affordable energy. (0006-4 [Ebert, S. Lewis])

**Comment:** It [nuclear power] is the cleanest, safest, most efficient and longest lasting source of energy we have, Nuclear power has proven itself. (0007-2 [Adams, C.A.]

**Comment:** We must move now, swiftly, and increase our nuclear output tenfold. (0007-3 [Adams, C.A.]

**Comment:** I am a strong supporter of nuclear energy. (0011-1 [Modeen, Jessica])

**Comment:** -Nuclear plants are the lowest-cost producer of baseload electricity. -By providing a reliable and affordable source of electricity, nuclear energy helps keep American business competitive. -Nuclear plants also are engines of local job growth. (0011-4 [Modeen, Jessica])

**Comment:** -Nuclear power plants, which do not emit carbon dioxide, account for the majority of voluntary reductions in greenhouse gas emissions in the electric power sector, according to a 2007 report from Power Partners, a partnership between the electric power industry and the U.S. Department of Energy. (0011-5 [Modeen, Jessica])

**Comment:** As a consumer in the Progress Energy territory - I am a proponent of having my energy come from nuclear power. (0011-9 [Modeen, Jessica])

**Comment:** We live in a gated community of approximately 1,200 families located southeast of Sanford off Highway 87. ... It is approximately 20 miles southwest of the Harris plant. On a clear winter day, we can recognize small white clouds that come from the cooling tower. ... Most residents here are well educated people who are knowledgeable of nuclear power. Although I can't speak for them, I believe that most residents would highly favor an environmentally-clean nuclear plant addition to the Harris plant rather than an environmentally-dirty fossil fuel addition. (0013-1 [Woodard, Carl H. and Sandra J.]

**Comment:** We need nuclear power NOW, we have delayed far too long, let's get energy independent ASAP. (0015-1 [Norden, Roger])

**Response:** *These comments provide general information in support of nuclear power. They do not provide any specific information relating to the environmental effects of the proposed action and will not be evaluated in the EIS.*

### **31. General Comments in Support of the Existing Plant**

**Comment:** We [The Clean and Safe Energy Coalition] support the construction of new reactors at Shearon Harris by Progress Energy... (0001-104 [Cann-Woode, Nina])

**Comment:** [W]e've had this [Unit 1] operate for over 20 years, safe, efficient, economic source of electricity for our region... (0001-12 [Bryan, Joe])

**Comment:** [A]n energy plant makes a good neighbor. It supports high paying jobs directly at the plant, generates additional jobs in the community where it is located and contributes by helping to build good schools, good roads, and civic improvements. (0001-124 [Hummel, Bill])

**Comment:** [T]hey are also giving back to our community. That is very much appreciated. (0001-14 [Bryan, Joe])

**Comment:** Progress Energy has always been transparent, they have been open. They have been a very good community partner, and we look forward to working with them as we move through this process for looking at the two new power plants. (0001-16 [Bryan, Joe])

**Comment:** There are four reasons why we believe that Harris is an ideal site....The last is that the growth is right here where we are talking about building potentially two new units, right here in the greater triangle area. So we have that already intact. (0001-25 [Pinnix-Ragland, Hilda])

**Comment:** [W]e [Progress Energy] have a proven track record. We have been in this business for 36 years with several other nuclear plants, and more than 20 right here at Harris. We have been consistent with our application and running a great nuclear plant. We have been recognized by our peers, recognized by industry. In fact in 2006 we received the Edison Electric Award, not only for operations, but for customer satisfaction, for overall reliability, and for environmental stewardship. We are very, very proud of that. (0001-27 [Pinnix-Ragland, Hilda])

**Comment:** Our community of Lee County regards the Harris Plant as a good neighbor, a long-term neighbor of over 20 years. In addition to providing safe, efficient, and economical source of electricity, the plant has provided jobs and economic benefit to our area. (0001-35 [Joyce, Bob])

**Comment:** [W]e believe that the company has demonstrated a serious concern for safety, a desire to plan carefully, and a commitment to be a good neighbor. We believe that they have earned the trust of the public and deserve the opportunity to expand... (0001-41 [Joyce, Bob])

**Comment:** Progress Energy and CP&L in the past, has been a good corporate partner for Wake County Schools and will continue to help us in our building program to look for energy efficient methodologies, to reduce our energy consumption and provide good service to our students and to our faculties. (0001-54 [Burriss, Mike])

**Comment:** I want the folks of the NRC to know that I personally with lots of experience with these folks, feel good about them [Progress Energy and CP&L], and I'm confident that they are going to provide answers to the questions that have been raised. (0001-69 [Winters, Mike])

**Comment:** I also feel like Progress is a partner. Whenever there is a need for discussions like that, Progress is right there at the table....Progress has an excellent record in the energy business, and we know they've got an excellent record in environmental protection. (0001-74 [Herts, Bob])

**Comment:** [W]e feel like Progress Energy has also been a very good partner for Wake County and our 840,000 citizens. (0001-9 [Bryan, Joe])

**Comment:** The Harris Plant has been in operation for more than 20 years providing a safe, efficient, and economical source of electricity. (0002-10 [Sauls, James])

**Comment:** I am concerned about the future of my community, the future of sustainable resources. But I also know that I interact with on many occasions the leadership of people at Progress Energy. I know they too are concerned about sustainability, family, environment, quality of life issues. (0002-100 [Porter, Barry])

**Comment:** I would like to share with you a little bit about Progress as it relates to a business partner. We just spoke to that. What a corporate partner they are, and what a community partnership they have brought to us. And so very quickly, just so you'll know, performing arts, of course, is one of the leading beneficiaries of Progress Energy. (0002-2 [Goodwin, David L.]

**Comment:** [I]n Wake County we have an energy commission; a board of commissioners appointed energy commission. And that commission has produced guidelines that help our buildings be constructed to a very environmentally low effort. This building is one. We have an energy design guideline that this building in partnership with Holly Springs was built under and our energy consumption for the long haul will be much lower because of this energy commission of which Progress has been a member since 1972. (0002-3 [Goodwin, David L.]

**Comment:** And there is one other thing I would like to mention. We have a history, and a great history, of running wonderful nuclear plants. In fact, we have been in the business for 36 years. We have operated an excellent record, for Harris for 20 years. We are very proud of that. We have received recognition from our peers. We have received recognition from the Edison Electric Institute, that occurred in 2006. We were recognized for operational effectiveness, for reliability, for customer satisfaction. We just received an outstanding award from what we call EEI or Edison Electric Institute. (0002-33 [Pinnix-Ragland, Hilda])

**Comment:** This commission also sponsors an energy camp where 40 rising sixth graders every year participate in energy and energy conservation week-long survey regarding that type of education. Progress Energy has supported that for 13 straight years as a beneficiary. And so we'd like you to know that. (0002-4 [Goodwin, David L.]

**Comment:** We have a kids museum that was in trouble in Raleigh. Many of you've heard of it. And for whatever reason, the formula didn't work and it was a little sick. And



our Progress Energy chair and CEO at the time, now Bill Johnson, took the helm of that local kids museum and really turned it around. (0002-5 [Goodwin, David L.]

**Comment:** [M]y company owns and manages commercial real estate, and I've had many dealings with people at Progress Energy. The people at this company are forward thinking professionals, with integrity and a commitment to customer service and safety. (0002-98 [Cammarata, Sal])

**Comment:** Progress Energy has operated nuclear plants safely and efficiently since the early 1970s, and the current Harris plant is a backbone of the state's economy and a critical part of Progress Energy's service to over one million North Carolina residences and businesses. (0006-5 [Ebert, S. Lewis])

**Comment:** Progress Energy (and CP&L before it) has always been an engaged partner in the community. We have benefited greatly from the efforts of Progress Energy. They have provided strong volunteer leadership to the Chamber to help provide guidance on a variety of issues. The track record of the Harris Plant is one of safety and reliability. (0009-3 [Moretz, Drew])

**Comment:** I have lived within the 10 mile evacuation limit since 1985, before Harris plant went on line. I feel that CP&L / Progress Energy has operated Harris plant in a safe and responsible manner and would be a good candidate for expansion. (0017-2 [Smelcer, Donald])

**Comment:** WHEREAS, the Harris Plant has been a reliable member of this community for two decades; and WHEREAS, 2,283 Progress Energy employees call Wake County home; and WHEREAS, Progress Energy has served its customers and our community for 100 years and is committed to being an outstanding corporate neighbor. (0030-4 [Bryan, Joe])

**Response:** *These comments express support for the existing unit at the site or for the applicant. They do not provide any specific information relating to the environmental effects of the proposed action and will not be evaluated in the EIS.*

## **32. General Comments in Opposition to the Licensing Action**

**Comment:** I'd like to lead off with a statement urging you elected officials and members of the business community not to endorse this project sight unseen. (0001-43 [Warren, Jim])

**Comment:** [T]hey could utilize existing sites and tell the locals, we already have approval for four reactors at that site. The fact is that Progress Energy does not have approval. It's proved by the fact that we are here today, neither from the NRC, nor from the state. And they have not proved that they need over 2000 more megawatts of power plant, nor that new nuclear reactors are the least environmentally harmful, or least cost, option. (0002-83 [Cullington, Liz])

**Comment:** I said over my dead body will they expand the nuclear power plant, and that was based on my knowledge of the waste that is produced by the nuclear power plant. (0002-84 [Schwankl, Audrey])

**Comment:** I believe that the construction of two new nuclear plants, reactors here at Shearon Harris, it would be an example of Progress Energy impeding our transition to truly safe and efficient energy, which we have the capability to produce here in North Carolina. It just squanders the resources needed to slow the global warming and to put us on the path of true safe and efficient energy. (0002-93 [Schwankl, Audrey])

**Comment:** Please DO NOT APPROVE these new reactors. (0004-4 [Blackburn, Jeanne])

**Comment:** I am sending you this message to let you know that we do not need any more towers here in New Hill. (0016-1 [Cross, Wayne])

**Comment:** As residents in Progress Energy-Carolina's service area, and a county that adjoins the proposed reactor site, we are writing to urge the NRC to suspend the review of Progress Energy's license application. (0022-1 [Bonitz, John] [Cullington, Liz] [Dukes, Patty] [Eads, Don] [Ellison, Margie] [King, Ed] [Meyer, Nick] [Royal, Lil] [Schwankl, Audrey] [Schwankl, Jimmy])

**Comment:** The NRC should halt review of the license application until it is complete and accurate, and a good faith submission. The NRC should also suspend license review for these two new nuclear plants for which there is currently no approved adequate water supply, in addition to no "certified" design, nor cost. (0022-15 [Bonitz, John] [Cullington, Liz] [Dukes, Patty] [Eads, Don] [Ellison, Margie] [King, Ed] [Meyer, Nick] [Royal, Lil] [Schwankl, Audrey] [Schwankl, Jimmy])

**Comment:** We urge the NRC to suspend its review of Progress Energy's Combined License Application... (0023-3 [Chiosso, Elaine])

**Comment:** [N]o further review of this license should proceed until water issues are resolved. (0023-7 [Chiosso, Elaine])

**Comment:** The Environmental Report submitted by Progress Energy has numerous inconsistencies and omissions, between sections, between sections and summaries, factual errors, and inconsistent findings, impacts or activities that appear in one section but not in another, appear in text but not in tables, and generally make NRC review impossible. (0023-9 [Chiosso, Elaine])

**Comment:** I would like to see you not build anymore until you have a 100% safe way of storing it or doing away with it. (0024-1 [Pactin, Judy])

**Comment:** NOW, THEREFORE, do we, that the Orange County Board of Commissioners, hereby resolve to: Oppose in the strongest terms possible the issuance of a permit by the NRC or of a Certificate of Convenience and Necessity by the NC Utilities for the Progress Energy plan to permit, design and construct one or more nuclear power reactors at the Shearon Harris nuclear power plant. (0031-12 [Jacobs, Barry])

**Response:** *These comments provide general information in opposition to the applicant's COL and will not be evaluated further. The NRC will carefully review the*

*application against its regulations that are intended to protect public health and safety and the environment.*

### **33. General Comments in Opposition to the Licensing Process**

**Comment:** I became aware of the plan to expand the nuclear waste fuel rod storage in the pools at the Harris Plant and pointed that out to the county commissions in Chatham County and that was conveyed to county commissioners in my county, Orange County. Orange County intervened in that. It was expensive, it was time consuming, and the rules of the NRC had prevented the expert for Orange County from even speaking to the group that was the Atomic Safety Licensing Board that was making the decision on whether it was all right to expand the fuel pools at the Harris Plant. He wasn't even allowed to speak. But I wish all of you would read his reports. (0001-131 [McDowell, Mary])

**Comment:** At a recent scoping meeting for the proposed license your representative, as the last speaker, told us that there was a licensing process like the Progress Energy application, Now in progress for a National storage facility for nuclear waste. That rang a bell with me, for as I remember that is exactly the same thing we were told over 30 years ago when they wanted to build the first plant. Don't you think 30 years is long enough? We believe that the National storage facility plus spent rod facility should be approved and activated before you issue any new licenses. (0025-1 [Womble, Wallace and Pansy])

**Comment:** PE states that "additional analyses may be required during the state permitting process.... "They should be required now, and the license review put on hold until water supply and water quality issues are resolved. (0028-39 [Cullington, Liz])

**Response:** *These comments provide general information in opposition to the NRC's COL process and will not be evaluated in the EIS. The NRC will carefully review the application against its regulations that are intended to protect public health and safety and the environment.*

### **34. General Comments in Opposition to Nuclear Power**

**Comment:** According to David Flemming, who wrote an article about nuclear power plants that was saying basically that they aren't a viable option, said that he showed the scientific sort of formula of how radioactive material disintegrates or becomes harmless to humans, that it would take for the half-life, that means for half of it to degrade to an acceptable place for us as human beings to have contact with it, basically the time for that is the age of the earth. So that's what we're producing in order to fuel our homes and our dreams and everything else that is great and was mentioned by so many folks here tonight. Because what you're saying is true. We have a very high standard of living and that standard of living is getting higher and higher, and we need energy to fuel that. But this is what we're really producing. This is our legacy with nuclear power. (0002-85 [Schwankl, Audrey])

**Comment:** I am very concern about the possibility of more nuclear reactors at the Shearon Harris site in N.C. when there are cheaper and safer effective alternatives such as conservation programs and wind and solar power. (0004-1 [Blackburn, Jeanne])

**Comment:** It is ultimately the cost to ratepayers that counts, and the legacy of the nuclear waste from 60 years of operation alone should make nuclear power the least attractive option in any thorough and unbiased analysis, and frequently has shown to be the most expensive and destructive option. (0022-13 [Bonitz, John] [Cullington, Liz] [Dukes, Patty] [Eads, Don] [Ellison, Margie] [King, Ed] [Meyer, Nick] [Royal, Lil] [Schwankl, Audrey] [Schwankl, Jimmy])

**Comment:** We believe that nuclear plants do nothing to reduce carbon emissions, especially when they are to be operated in tandem with coal plants, and that nuclear power will not accomplish any of its claimed benefits. (0022-18 [Bonitz, John] [Cullington, Liz] [Dukes, Patty] [Eads, Don] [Ellison, Margie] [King, Ed] [Meyer, Nick] [Royal, Lil] [Schwankl, Audrey] [Schwankl, Jimmy])

**Response:** *These comments provide general information in opposition to nuclear power. They do not provide any specific information relating to the environmental effects of the proposed action and will not be evaluated in the EIS.*

### **35. General Comments in Opposition to the Existing Plant**

**Comment:** The Harris safety record should disqualify the building of any new nuclear power plants as far as I'm concerned. If the old ones couldn't be maintained correctly, how can we trust them with new untested power plants? (0002-88 [Schwankl, Audrey])

**Comment:** I am completely opposed to new nuclear power plant construction... (0008-1 [Turk, Lawrence "Butch"])

**Comment:** Given the problems at the current Progress Energy facility we do not have confidence that additional plants should be built without rigorous examination. (0023-2 [Chiosso, Elaine])

**Response:** *These comments express opposition to the existing unit at the site or to the applicant. They do not provide new information related to the environmental review for the proposed units and will not be evaluated in the EIS.*

### **36. Comments Concerning Issues Outside Scope – Emergency Preparedness**

**Comment:** Many citizens are concerned that the roads in and around the Harris facility are the same as when the plant was first built. There is a fear among citizens that should there be an emergency, the inadequate roads will become grid-locked...I implore you to make certain that old and antiquated routes and roadways be brought up to acceptable standards (0001-1 [DeBenedetto, Vinnie])

**Comment:** We can't assume that the emergency management will be able to get plant workers to the plant after hurricanes of a different nature than we have ever seen before. We can't assume that flooding will not prevent people from getting to work. I mean, where are the workers who have to operate the plant and deal with emergencies going to live? (0001-129 [McDowell, Mary])

**Comment:** As far as the impact of raising Harris Lake, there are maps available that attempt to show the pervasiveness of such a lake level height increase on the surrounding land. This new level will undoubtedly cause many roads, bridges, and Harris Park to essentially be under water...this impact[s] evacuation roads. (0001-7 [DeBenedetto, Vinnie])

**Comment:** How are we going to look at the next 50 years to forecast out to have that kind of data of what this area is going to look like?...Things have changed that much over the last 20 years. Over the next 50 years, this population will be greatly increased. And we need to have good information to do that emergency planning. (0001-87 [Runkle, John D.]

**Comment:** Given the impossibility of evacuating the Apex, Cary and Raleigh downwind areas in a timely manner, where the population has increased exponentially since the 1960s when the site was first proposed, we would prefer not to be among the first guinea pigs for this still experimental new reactor design. (0002-81 [Cullington, Liz])

**Comment:** In 1987 when Unit 1 of the SHNPP was licensed, there were only 15,000 people living in the 10-mile emergency planning zone (EPZ); currently there are at least four times that many, and the population is predicted to grow significantly from the present through any licensing period. Likewise, the population within the 50-mile EPZ is forecast to grow significantly, compounding all attempts to safely evacuate people around the plant. The EIS needs to look realistically at these significant population increases and projected changes in land use. (0005-2 [Runkle, John D.]

**Comment:** Without a solid grasp on who will be living around the plant, the NRC and Progress Energy (formerly Carolina Power & Light) cannot prepare its emergency plans. Of concern are the susceptible populations, i.e., children, women of childbearing age, senior citizens and nursing home residents who may have special difficulties in the event of an evacuation and may be more susceptible to radiation emissions and other hazards that could occur in connection with evacuation and relocation. A baseline health study is essential in finding out the broadly-defined medical needs of these susceptible populations. (0005-3 [Runkle, John D.]

**Comment:** The Orange County Board of Commissioners, in an October 3, 2006 resolution, concluded that there is no coordinated emergency management and evacuation planning for the portion of the ingestion pathway beyond the area defined by the ten-mile radius around Shearon Harris. Other local governments have express the same concerns. (0005-5 [Runkle, John D.]

**Comment:** I do feel that infrastructure must be considered to ensure that evacuation in a timely manner is possible. (0017-3 [Smelcer, Donald])

**Comment:** BE IT FURTHER RESOLVED that the Holly Springs Town Council desires that the NRC address the environmental, socioeconomic and public safety concerns and findings of the Town by requiring the applicant to...be required, as a part of its issuance of a COL, to reconstruct, widen and otherwise improve the bridges on New Hill Road and Friendship Road and the Avent Ferry Road evacuation route to a four-lane median-divided roadway as called for on the Town of Holly Springs Transportation Improvement Plan, or obtain adequate assurances from NCDOT or the U.S. Department of Transportation that the work will be done expeditiously. (0019-10 [Sears, Dick])

**Comment:** Emergency Response. 1) There is a need to consider reviewing the current contract between the Apex Fire Department and Progress Energy. The construction of two additional reactors and the addition of 4,000+ workers during the construction of the plant would suggest a need for changes in the contract to reflect this expansion. 2) The Town would like to know if the EPZ is going to increase because of the addition of these 2 reactors. 3) Progress Energy should make sure that there are procedures in place to allow easier access to the construction site for emergency personnel. Having to enter the secured area of the plant would surely delay the response to a possible life-threatening situation. 4) Roads in that area, aside from US 1, are all rural 2-lane state-maintained thoroughfares that may require upgrades prior to or following the plant expansion. ...[L]ong term evacuation needs should be addressed. 5) The Town hopes that Progress Energy would assist the local communities and NC DOT in upgrading the road network around this facility in order to improve evacuation routes. (0020-2 [Radford, Bruce])

**Comment:** (p. 10-60) 10.3.2.9.8 Public Facilities There is an implication here no new emergency response plan is needed. However, wouldn't local first responders need to be trained in the complete different design of the AP1000 for firefighting or radiological emergencies? (0028-236 [Cullington, Liz])

**Response:** *These comments relate to the adequacy of emergency plans, which is a safety issue that is outside the scope of the NRC staff's environmental review. As part of its site safety review, the NRC staff will determine, after consultation with the U.S. Department of Homeland Security and Federal Emergency Management Agency, whether the emergency plans submitted by the applicant are acceptable.*

### **37. Comments Concerning Issues Outside Scope –Miscellaneous**

**Comment:** I am not happy with Progress Energy's communication with the town of Holly Spring. (0001-95 [Holleman, Gerald])

**Comment:** Does Progress Energy have radiological exposure records for the construction workers, some of them reported as recent immigrant labor, who worked close to the existing and operating reactor when PE relocated various functions from the unused area of the fuel handling building, and built a new facility to house those activities? Does anyone anywhere even know who they were? Yet, on the very same page (as elsewhere) PE states that there is no disproportionate high impact to minority or low income populations. (0028-152 [Cullington, Liz])

**Response:** *This comment provides no new information relevant to the environmental review of the COL application and therefore will not be evaluated further.*

**Comment:** [W]e must make sure that it is done in a way that maximizes employment, preserves the environment, saves current and future ratepayers and taxpayers money, avoids waste, and does so in a way that is not sensitive to small changes in the economy or the weather. Nuclear energy is not perfect, and we need to recognize both the benefits and the costs before deciding if we need 2000 more megawatts of it. I hope you'll address these concerns, and provide the information needed to make a decision that best meets our needs. (0010-37 [Keto, Evan])

**Response:** *This comment provides no new information relevant to the environmental review of the COL application and therefore will not be evaluated further. Socioeconomic impacts will be evaluated in Chapters 4 and 5 of the EIS.*

### **38. Comments Concerning Issues Outside Scope – NRC Oversight**

**Comment:** The NRC has not taken a proactive effect I picked up some of the literature, and some of that literature talked about the fact the NRC's responsibility and mission is to protect public health and safety, inspect facilities to ensure the compliance and enforcement against any possible danger to the public health and safety by ensuring licensee's compliance with regulations and licensing conditions. (0001-113 [Gilbert, Bob])

**Comment:** Now I am not going to go into why they haven't been resolved, but there's been no action, no change, no remediation, no penalties, and no enforcement. I don't feel that the NRC is protecting the public health and safety in that way. (0001-115 [Gilbert, Bob])

**Comment:** I have some skepticism and concerns that the NRC is good at limiting and considering what is -- what has been considered in the past, and not expanding and really considering all of the possibilities. (0001-130 [McDowell, Mary])

**Comment:** But the NRC said we don't need to consider that in whether we should allow them to expand the fuel pools, because it's so unlikely that it would happen. So unlikely that anyone would fly a plane and wreck it to try to harm the U.S. I think that we all saw that in 9/11. It can happen. And the NRC doesn't require the company or any company to protect the reactor or the fuel pools from a large airplane crash like that. They don't have to because they say well, you know, the federal government will take care of that. (0001-134 [McDowell, Mary])

**Comment:** I'm extremely concerned about the Nuclear Regulatory Commission. They got a lot of good people here today from NRC, but frankly, they don't do their job. The Inspector General of the NRC, and it's on the back of our handout today, has confirmed that NRC has not enforced fire safety regulations at Harris and a number of other plants for 16 years. Fire is a leading risk factor for a nuclear meltdown. And the Inspector General of the agency says they are not doing their job. (0001-51 [Warren, Jim])

**Comment:** We expect responsible leaders of the nuclear power industry to have scientific supportable answers to these questions before any action is taken. (0001-66 [Smith, Jane])

**Comment:** I don't know what the right solution is because I'm not smart enough and qualified enough to ever make those decisions, but I hope that we have people like those of you on the staff of the NRC making effective decisions in a changing world, the changing climate and the changing environment that will help us sustain our quality of life, leave a legacy that is not destroying the environment, and at the same time adapting ourselves to change. (0002-101 [Porter, Barry])

**Comment:** I trust the NRC to complete a very comprehensive review to see whether this proposed action is really in the best interest of North Carolinians. (0010-36 [Keto, Evan])

**Comment:** We believe that the NRC's major responsibility is protecting the public and future generations from unnecessary and excessive exposure to radioactive materials and pollution, and ensuring the safety of the nation's aging fleet of operating reactors. We believe that the mass, fast-tracking, license application review for a large number of new, and untried nuclear plants, based on a new, moving-target design, does not further that goal, and indeed could interfere with it. (0022-16 [Bonitz, John] [Cullington, Liz] [Dukes, Patty] [Eads, Don] [Ellison, Margie] [King, Ed] [Meyer, Nick] [Royal, Lil] [Schwankl, Audrey] [Schwankl, Jimmy])

**Comment:** We believe the Nuclear Regulatory Commission has a tremendous duty to the public to ensure safety, now, and for future generations. There is no room for error in this deliberation and you should demand information that is complete and accurate before any further deliberation takes place. (0023-11 [Chiosso, Elaine])

**Comment:** It is not possible for the NRC to determine EIS impacts if the applicant submits incomplete, inconsistent, and/or inaccurate information. (0028-200 [Cullington, Liz])

**Comment:** WHEREAS, the Orange County Board of Commissioners and the community have grave concerns about the NRC's objectivity in evaluating the nuclear power industry's proposals and programs related to the concerns outlined above. (0031-8 [Jacobs, Barry])

**Response:** *The NRC takes seriously its responsibility under the Atomic Energy Act to protect the health and safety of the public and the environment in regulating the U.S. nuclear power industry. More information on NRC's roles and responsibilities is available on the NRC's website at <http://www.nrc.gov/what-we-do.html>. The comments did not provide new information relating to environmental effects of the proposed action and will not be evaluated in the EIS.*

### **39. Comments Concerning Issues Outside Scope – Safety**

**Comment:** I was extremely upset about the fact that for 15 years Progress has not taken a proactive effect or attitude about the fire safety issues dealing with the high tech material. We have a very dangerous situation. Now I am very grateful that the plant hasn't caught on fire and we haven't had a problem. But there are several miles of this material which has been proven to be ineffective. (0001-112 [Gilbert, Bob])

**Comment:** We have had fire violations at Shearon Harris, depending on how you count it, between nine and 15 years, and they haven't been resolved. (0001-114 [Gilbert, Bob])

**Comment:** Even with an additional height of 20 feet in the Harris Lake, there could be circumstances that would cause lake levels to get so low as to cause a plant shutdown. (0001-4 [DeBenedetto, Vinnie])



**Comment:** Look at the track record on the fire protection. When the first unit was licensed, we had about a four-week hearing on the track record of Progress Energy -- it was Carolina Power and Light, at that site, because they had so many problems at the Brunswick and the Robinson plant. If you look at the track record on the fire issues, it's real clear that until Progress Energy cleans up those deficiencies, it's unreasonable to go ahead and give license to any new power plants. (0001-88 [Runkle, John D.]

**Comment:** Even if two new reactors in Wake County were actually part of a solution to global warming, then we would still have to also consider the safety issues. (0002-62 [Cullington, Liz])

**Comment:** Contrary to what you'd expect, the new reactors are not to be sited next to this larger lake, but north of the smaller reservoir so that the water supply and heat sink required to prevent a meltdown would be the same smaller reservoir for three reactors that currently is not always enough for one reactor. And water supply for the three reactors would depend on two active pumping systems, which would basically depend on off site power from other sources, rather than power from the reactors themselves. (0002-70 [Cullington, Liz])

**Comment:** It is important for members of the public to understand that when a group of power companies approached Westinghouse for a new reactor design back around 1990, the utilities wanted a plant that would be cheaper and faster to build, and easier to operate. This wasn't because of concern over global warming back then. Increased safety in the design would also mean fewer unexpected shutdowns. But between the first prototype and now there have been many safety compromises because utilities like Duke and Progress Energy were stuck on the idea of a 10000 megawatt reactor, not a 600 megawatt reactor. (0002-82 [Cullington, Liz])

**Comment:** I have been studying the nuclear power plant there and listening to what people have to say about the safety issues there, and well, they have been out of compliance with fire safety for 15 years. (0002-87 [Schwankl, Audrey])

**Comment:** A significant fire can lead to the loss of the operator's ability to achieve and maintain hot standby/shutdown conditions further resulting in significant accidental release of radiation and posing a severe threat to public health and safety. (0005-6 [Runkle, John D.]

**Comment:** Progress Energy has had a poor track record of compliance with fire protection rules and it is unreasonable to consider licensing new reactors at SHNPP until Progress Energy shows that it has taken care of the present deficiencies. Since at least 1992, the present reactor has been out of compliance with requirements to maintain the post-fire safe shutdown systems that minimize the probability and effects of fires and explosions. It is not expected to come into compliance until the year 2015 or later. (0005-7 [Runkle, John D.]

**Comment:** NC WARN has brought this issue to the NRC, Congress and other Federal agencies and in its report, Delaying with Fire: The Shearon Harris Nuclear Plant and 14 Years of Fire Safety Violations, and other activities. Currently there is an investigation by the Government Accountability Office on the long series of NRC notices, bulletins and enforcement actions that have been in large part ignored by Progress Energy; promises to come into compliance have been repeatedly made and then postponed. The NRC

Office of the Inspector General recently confirmed these charges. People living around the SHNPP remain subject to severe and undue risks from these noncompliant practices. The current risks from Unit 1 are compounded by adding two more reactors. (0005-8 [Runkle, John D.]

**Comment:** Current aging plants are more dangerous than ever due to technical failures, cost-cutting pressures, and unresolved design flaws. 51 times, U.S. plants have been shut down for over a year to restore minimum safety levels. Problems and extended outages would be more likely with new, untested reactor designs. (0008-8 [Turk, Lawrence "Butch"])

**Comment:** It seems like placing all 3 nuclear power plants in the same small area would increase the risk of having all three plants shut down at once. What happens if a tornado comes through, or the dam breaks? We wouldn't only have one plant down, we'd have all 3 down. Wouldn't it be better to spread the risk and spread our power facilities out? (0010-24 [Keto, Evan])

**Comment:** -The nation's nuclear power plants are among the safest and most secure industrial facilities in the United States. Multiple layers of physical security, together with high levels of operational performance, protect plant workers, the public and the environment. (0011-6 [Modeen, Jessica])

**Comment:** The Haw River Assembly and Haw Riverkeeper have long-standing concerns about the safety of the current existing Shearon Harris Nuclear Power Plant including transport, radioactive waste storage and faulty construction and maintenance. All these issues pose dangers to the Haw River watershed that we have worked to protect since 1982. (0023-1 [Chiosso, Elaine])

**Comment:** The AP1000 could have a far worse impact from a catastrophic accident than from a previous generation PWR, since it has no "containment dome." (0028-141 [Cullington, Liz])

**Comment:** During severe drought periods, plant water use requirements would be met for a period of time by using available reservoir storage. But during prolonged drought that storage could be inadequate, and is going to get hotter and hotter from the combination of plant cooling and fuel pool cooling, plus possibly prolonged heat wave and high pressure system/no rain conditions. Even if the reactor is shut down it is still going to need constant cooling, and even if all the fuel were removed. the fuel pools of three reactors are going to need to be constantly cooled. Has PEC actually provided a credible thermal analysis of three reactors, with six fuel pools, all densely packed, a prolonged drought and a prolonged heat wave???? (0028-163 [Cullington, Liz])

**Comment:** It should be noted that just when that heat sink of the lake would most be needed, during loss of offsite power, for all three reactors, PE has not provided any information about what is to power the artificial sources of water supply to the Auxiliary Reservoir which is to supply water to all 3 reactors: 1) the pump that pumps water from Harris Reservoir to the Auxiliary Reservoir, 2) the pump to pump water from the Cape Fear to the Harris Reservoir, 3) the pumps at the Western Wake WWTP in New Hill that might discharge directly to the Auxiliary Reservoir, or if not, into the Cape Fear River, maintaining adequate flow there. (0028-34 [Cullington, Liz])

**Comment:** This "draft EIS" was prepared for discharge into the Cape Fear not Harris Lake. PEC implies that it is up to the state to sort out issues related to withdrawal of water from the Cape Fear, and other water impacts (such as low flow downstream). But these are critical safety issues that the NRC must consider and resolve before continuing to review the license. In addition to normal cooling water needs, and evaporative losses, the Harris Lake system also would have to provide emergency cooling and firefighting water for three nuclear plants and an additional inventory of spent fuel from other reactors in dense storage at the site's extra fuel pools, and the ultimate "heat sink" for 3 reactors and that additional inventory of spent fuel. **(0028-38** [Cullington, Liz])

**Comment:** WHEREAS, the expansion of the pool storage of fuel rods at Shearon Harris nuclear power plant would be vastly increased by the addition of one or two new reactors, and associated fuel rod storage pools at the facility would only exacerbate the consequences of a fuel rod fire. **(0031-2** [Jacobs, Barry])

**Comment:** WHEREAS, absent terrorist attack, approximately 50 percent of the risks of catastrophic nuclear plant failure (as calculated by the NRC) are associated with fire-related accidents; and WHEREAS, information has been presented to the community at large and the Orange County Board of Commissioners as to ongoing problems with fire safety practices at the Shearon Harris nuclear power plant; and WHEREAS, Progress Energy has indicated that it will take seven to ten more years to bring the Shearon Harris nuclear power plant into compliance with the NRC's adopted fire safety standards and regulations; and WHEREAS, Progress Energy has indicated that it has or will apply to the NRC for a twenty year extension of its operating license for the Shearon Harris plant while the plant is not in compliance with existing fire safety standards and regulations. **(0031-5** [Jacobs, Barry])

**Comment:** WHEREAS, Progress Energy is in the process of evaluating, permitting, designing and constructing two nuclear power reactors at the Shearon Harris nuclear power plant while the existing plant is not in compliance with existing fire safety standards and regulations. **(0031-6** [Jacobs, Barry])

**Response:** *The issues raised in these comments are safety issues, and as such, are outside the scope of the environmental review and will not be addressed in the EIS. A safety assessment for the proposed licensing action was provided as part of the application. The NRC is developing a safety evaluation report that analyzes all aspects of reactor and operational safety.*

#### **40. Comments Concerning Issues Outside Scope – Security and Terrorism**

**Comment:** The trouble with that is if an airplane hits the top of the fuel pool building, which is not built like the reactor, it's not a containment zone, and the pools are breached so the water flows out. If the water gets below the level of the tops of the fuel rods, they will spontaneously ignite. That fire will spread to all the fuel rods in storage and it will release to the atmosphere at least ten times the radio activity that was released in Chernobyl. **(0001-133** [McDowell, Mary])

**Comment:** We all know nuclear power plants are vulnerable and potential targets for sabotage or terrorism, and due to industry cost cutting pressures, the NRC in January of '07 decided not to require plant owners to defend against various air attacks or more than a handful of attackers by ground. (0001-46 [Warren, Jim])

**Comment:** One issue that must be shown in the Environmental Impact Statement is defense against aviation attacks. It's pretty clear from all of the recent studies going back -- the Argonne Laboratory study was 1982, that shows that nuclear power plants are aviation threats. You don't have to bring radioactive material in through Canada as a dirty bomb. You just blow up a nuclear power plant. (0001-89 [Runkle, John D.]

**Comment:** In addition to aviation attacks there are a number of viable terrorist threats to the SHNPP that should be fully investigated in the EIS. San Luis Obispo Mothers forPeace v. NRC, 449 F.3d 1016 (9th Cir. 2006), cert. den. 127 S.Ct. 1124 (2007). Nuclear reactors are expressed terrorist targets that need to be dealt with by highly trained security forces and may require significant design and structural changes. (0005-10 [Runkle, John D.]

**Comment:** Progress Energy's track record of compliance on security and safeguards should be examined closely so that current unsafe practices at Unit 1 do not add to the risks at the proposed units. (0005-11 [Runkle, John D.]

**Comment:** It would be a clear violation of NEPA if the EIS does not address the environmental impacts of a successful attack by the deliberate and malicious crash of a fuel laden and/or explosive laden aircraft and the severe accident consequences of the aircraft's impact and penetration on the facility. It is unreasonable for the NRC to dismiss the possibility of an aviation attack on the SHNPP in light of the studies by the NRC at least since the 1982 Argonne National Laboratory study, NUREG-2859, that this is a real possibility that could have devastating results. The potential for accidents caused by deliberate malicious actions and the resulting equipment failures is not only reasonably foreseeable, but is likely enough to qualify as a DBA, i.e., an accident that must be designed against under NRC safety regulations. An aircraft crash affecting the ultimate heat sink (cooling tower, water intakes, etc.) would leave core cooling dependent on the feed-and-bleed cooling mode, provided a sufficient water supply and electrical power remain available. (0005-9 [Runkle, John D.]

**Comment:** Nuclear plants are vulnerable to sabotage and acts of insanity. Due to industry cost-cutting pressure, the U.S. Nuclear Regulatory Commission in January 2007 decided not to require plant owners to defend against various air attacks or more than a handful of attackers by ground. (1/30/07 Associated Press) (0008-5 [Turk, Lawrence "Butch"])

**Comment:** It is of continuing frustration that the NRC is not requiring this applicant (or Westinghouse) to address aircraft attacks on the reactor or fuel pools. And as for terrorist threats, why hijack an aircraft when you could just blow up the dam? Has catastrophic failure of the dam for any reason been considered as part of the potential accident scenario? (0028-49 [Cullington, Liz])

**Comment:** WHEREAS, the vastly increased quantity of pool-stored spent fuel rods at Shearon Harris nuclear power plant will serve to enhance the attraction of this facility for terrorist attack. (0031-3 [Jacobs, Barry])

**Comment:** WHEREAS, regardless of the safety and security findings made by NRC inspections of the plant, NRC and Progress Energy policies and procedures promote inadequate security measures to protect the plant and spent fuel pool storage area from terrorist activities culminating in fire and airborne release of toxic nuclear waste materials. (0031-4 [Jacobs, Barry])

**Comment:** Especially with the terrorist threats we have today, are you prepared to protect all these waste sites for many centuries? (0025-3 [Womble, Wallace and Pansy])

**Response:** *Comments related to security and terrorism are safety issues that are not within the scope of the NRC staff's environmental review and are regulated by 10 CFR Part 73, "Physical Protection of Nuclear Power and Materials." Anti-terrorist security measures are established for each plant. The NRC is devoting substantial time and attention to terrorism-related matters including coordination with the U.S. Department of Homeland Security. As part of its mission to protect public health and safety and the common defense and security pursuant to the Atomic Energy Act, the NRC staff is conducting vulnerability assessments for the domestic use of radioactive material. Since September 2001, the NRC has identified the need for license holders to implement compensatory measures and has issued several orders to license holders imposing enhanced security requirements. Finally, the NRC has taken actions to ensure that applicants and license holders maintain vigilance and a high degree of security awareness. Consequently, the NRC will continue to consider measures to prevent and mitigate the consequences of acts of terrorism in fulfilling its safety mission. Additional information about the NRC staff's actions regarding physical security since September 11, 2001, can be found on the NRC's public website (<http://www.nrc.gov>).*

## Summary

On February 18, 2008, PEC submitted to the NRC an application for a COL for Shearon Harris Nuclear Plant Units 2 and 3 to be located at the Shearon Harris Nuclear Power Plant Site in the southwestern corner of Wake County, North Carolina.

On May 22, 2008, in accordance with 10 CFR 51.26, the NRC initiated the scoping process by publishing a Notice of Intent to Prepare an Environmental Impact Statement and Conduct Scoping Process in the *Federal Register* (73 FR 29785), with a correction published in the *Federal Register* (73 FR 31892) on June 4, 2008. The Notice of Intent notified the public of the staff's intent to prepare an EIS and conduct scoping for the COL application. Through the notice, the NRC also invited the applicant; Federal, Tribal, State, and local government agencies; local organizations; and individuals to participate in the scoping process by providing oral comments at the public meetings and/or submitting written suggestions and comments no later than July 25, 2008. Public scoping meetings were held at the Holly Springs Cultural Center in Holly Springs, North Carolina on June 10, 2008. Comments were consolidated and categorized according to topic within the EIS or according to the general topic if outside the scope of the EIS. Those comments, along with the responses prepared by NRC staff, are presented in this Scoping Summary Report.

The draft EIS for PEC's COL application will address the relevant environmental issues raised during the scoping process. The draft EIS will be made available for public comment. Interested Federal, Tribal, State, and local government agencies; local organizations; and members of the public will be given the opportunity to provide comments on the draft EIS. The NRC staff will consider these comments during the development of the final EIS.