

Carolina Power & Light  
Corporate Communication  
PO Box 1551  
Raleigh NC 27602



No of pages 2  
From Susan Antikfield  
Dept \_\_\_\_\_  
Tel 919-362-2160  
Fax 919-362-2095  
Subject spent fuel pools

To Ken Clark  
Co NRC  
Dept \_\_\_\_\_  
Fax 404-331-7023  
562-4980

NEWS



October 20, 1998

### CP&L working to activate fuel-storage facilities at Harris Plant

Carolina Power & Light has begun the process of obtaining approval from the Nuclear Regulatory Commission (NRC) to make the modifications necessary to activate two already-built spent fuel pools at the Harris Nuclear Plant near New Hill.

The plant, which began commercial operation in 1987, was originally designed for four units. Common support facilities, including a fuel handling building, were required to be built to support the operation of Unit 1, the first unit to be placed into service. As plans and regional electrical demand projections changed, the remaining three units were canceled.

Harris currently has two spent-fuel pools in operation in the fuel handling building, and the activation of the two other existing pools is aimed at preparing for future storage needs.

Nuclear fuel is used – as is coal, oil or natural gas in other power plants – to create heat to produce steam. The high-pressured steam forces a turbine to turn, producing electricity. As with other types of fuel, nuclear fuel must be replaced periodically (although in other generation processes, the replacement of fuel is continuous). And the used nuclear fuel is immersed in a pool where it can be monitored and moved, ultimately, to a permanent storage facility.

CP&L Senior Vice President and Chief Nuclear Officer C.S. "Scotty" Hinnant said the activation is needed because of the lack of movement on siting and building a federal repository.

"The U.S. Department of Energy has been under legal obligation for a number of years to take ownership of all spent nuclear fuel in the United States, and ultimately, to store it in a deep underground repository," Hinnant said. "CP&L and other utilities with nuclear power plants have paid hundreds of millions of dollars into a federal waste fund over the years for the construction of a centralized storage facility.

"Unfortunately, the Department of Energy has not lived up to its obligation. Its spent fuel storage facilities are not available and are not expected to be available for the foreseeable future. Therefore, CP&L and all other nuclear utilities are forced to store all their spent fuel themselves."

**Carolina Power & Light**

Page 2

The Harris Plant stores spent fuel from its own reactor and from CP&L's Brunswick Nuclear Plant at Southport and Robinson Nuclear Plant near Hartsville, S.C.

"CP&L is in a much better position than many other companies in that Harris Plant has enough spent fuel storage capability to handle all the spent fuel from CP&L's nuclear units through the end of their current operating licenses," Hinnant said. "Many other utilities are having to build expensive dry cask storage facilities in order to keep operating."

CP&L is seeking federal and state approval to complete the cooling systems and to make other modifications needed to bring the facilities into service. CP&L expects to submit a request to the NRC in October 1998, and anticipates the NRC's review process will take about a year. CP&L's plans call for the third pool to be in service by early 2000. The fourth pool would not be needed for several years thereafter; however, it is more efficient to include the plan for the fourth pool in the overall NRC review request now.

CP&L's operates a system of 16 power plants in the Carolinas, providing service to nearly 1.2 million customers. The company's nuclear program is recognized as being among the leaders in the industry in terms of production, safety and cost. In each of the last four years, CP&L's nuclear plants have set records for total generation.

###

Contact: Corporate Communications

**CP&L Shearon Harris Nuclear Plant**  
**Spent Fuel Pool Activation Project**  
November 1998

- The Shearon Harris Nuclear Plant was originally designed with the ability to store spent fuel from four nuclear reactors.
- Four spent fuel pools were built during original plant construction.
- Only two of the spent fuel pools were placed in service in 1987 when the Harris Plant began commercial operation.
- Anticipating that DOE would fulfill its legal obligations to take possession of spent nuclear fuel, the remaining two pools were not placed in service in 1987.
- Contingency plans were made at that time to place the remaining two pools in service in the late-1990's if necessary.
- The remaining two pools are fully constructed but some plant modifications are necessary to install spent fuel storage racks in the pools and to finish the cooling water system. Activities necessary to finish the cooling system include installing pipe (approximately 80% was installed when the pools were built), installing motors and completing the electrical connections.
- All of the regulatory related correspondence between CP&L and the NRC during the time that Harris plant was licensed by the NRC for commercial operation acknowledged the plans to ultimately use all four spent fuel pools, if necessary.
- The Harris Plant spent fuel pools are currently used to store spent fuel from the Harris plant as well as from CP&L's other nuclear sites (Brunswick Nuclear Plant at Southport and Robinson Nuclear Plant near Hartsville, SC).
- CP&L ships spent fuel from the Robinson and Brunswick plants by rail in a specially designed shipping cask. These shipments occur an average of nine times each year. Spent fuel shipments from other CP&L plants to Harris have been occurring since 1989.
- The two in service spent fuel pools are nearing capacity.
- Since the DOE has not fulfilled its legal obligation to take ownership and possession of spent nuclear fuel from utilities, the remaining two pools need to be placed in service to provide spent fuel storage capacity sufficient to allow continued operation of all of CP&L's nuclear plants.
- Placing the two remaining pools in service will provide enough spent fuel storage capacity for CP&L's nuclear units through the end of their current operating licenses.
- If the additional pools are not placed in service, more costly dry cask storage facilities will have to be built. Some utilities without the benefit of adequate spent fuel pool capacity are building dry cask storage facilities in order to provide spent fuel storage to keep their nuclear plants operating.
- Operation of all of CP&L's nuclear plants is needed to meet customer demand for electricity.

- CP&L has begun the necessary engineering, modification and regulatory activities to place the remaining two Harris spent fuel pools in service.
- CP&L plans to place the two pools in service in early 2000.
- The paperwork needed to gain NRC approval to place the remaining two pools in service will be submitted to the NRC in late 1998.
- A one year NRC review and approval cycle is anticipated.
- The Fuel Handling Building (which contains all four of the spent fuel pools and related equipment) is designed and built to withstand hurricanes, tornadoes and earthquakes.
- The pools include fully redundant, nuclear emergency grade level and temperature instrumentation used to continuously monitor the safe status of the pools' water inventory and temperature.
- The cooling system that maintains pool temperature is also a fully redundant and nuclear emergency grade.



Carolina Power & Light Company  
PO Box 1551  
Raleigh NC 27602

C.S. Hinnant  
Senior Vice President and  
Chief Nuclear Officer

November 2, 1998

Mr. Jim Warren, Executive Director  
North Carolina Waste Awareness and Reduction Network  
P.O. Box 6015  
Durham, NC 27715-1951

Dear Mr. Warren:

Thank you for your interest in our Harris Nuclear Plant. I am responding to your letter of October 20 on behalf of Bill Cavanaugh, and as CP&L's chief nuclear officer.

Carolina Power & Light places the highest priority on ensuring the safety of the general public in our company operations, including the management of our nuclear generation facilities. The workers at the Harris Plant and the officers of this company are residents of the Triangle, and the safety of our families, friends and neighbors is paramount in our nuclear planning. Consequently, our plans to store spent fuel on site at the plant were developed with the primary goal of providing the safest storage possible. Spent nuclear fuel has been stored safely throughout the nuclear industry for more than 30 years, and at the Harris Plant for more than 10 years.

Let me take a moment to specifically address your belief that CP&L has operated in secrecy in pursuing the expansion of the spent fuel storage capability at the Harris Plant. Placing the C and D storage pools into service to store fuel is not a new concept. These pools were designed and constructed as part of the original plant design, and placing them into service at the appropriate time has always been a part of our operations plan for the plant. Open and honest dialogue with area leaders and the community have characterized our general approach to operation of the Harris Plant and specifically to the storage of spent fuel.

We have had numerous conversations with public officials about spent fuel storage and have held two preliminary technical meetings with the Nuclear Regulatory Commission which were publicly noticed and open to public participation. We will continue to keep local county commissioners and other local officials informed of our operational plans at Harris.

I would also like to underscore that the current process that exists for reviewing and approving license amendment requests, as promulgated in the Code of Federal Regulations, includes adequate provisions to ensure public awareness and an opportunity for you and other members of the public to identify and resolve any technical concerns or issues that you may have.

F/116

Mr. Jim Warren

2

November 2, 1998

We appreciate your recognition that a national disposal site is the best alternative. However, because no permanent, federally approved site has yet been built, we have developed an interim spent fuel plan that we believe is the safest option available.

Thank you again for your concern and interest. CP&L takes our responsibility to serve very seriously, and our company remains committed to the successful and safe operation of electric generating facilities that serve the needs of the citizens of this region and throughout our state.

Sincerely,

*CS Hinman*

CSH/kmc

c: William Cavanaugh III  
Shirley A. Jackson, Ph.D.  
William S. Orser

NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

NOV 12 1998



JAMES B. HUNT JR. GOVERNOR

WAYNE McDEVITT SECRETARY

Margaret Bryant Pollard, Chair
County of Chatham
P. O. Box 87
Pittsboro, North Carolina 27312

Dear Commissioner Pollard:

This is in response to your September 18, 1998 letter concerning the Carolina Power and Light Company (CP&L) proposal to use the two additional spent nuclear fuel pools at their Shearon Harris Nuclear Power Plant.

As you are aware, the regulatory responsibility for nuclear power plants and the transportation and ultimate disposal of spent nuclear fuel rests with the Federal government. Members of our Division of Radiation Protection (DRP) over the years have been actively involved in monitoring both the efforts of the U.S. Nuclear Regulatory Commission (NRC) and the Department of Energy as they relate to their licensing actions associated with the power plants and the spent fuel disposal efforts.

DRP has been actively involved in the radiation safety aspects of the previous spent nuclear fuel shipments and works closely with the Department of Crime Control and Public Safety, Division of Emergency Management on the emergency response efforts associated with these shipments.

The Division of Radiation Protection has assured me that they will monitor closely NRC's radiation safety review of the CP&L proposal. Should DRP identify any questions or issues they believe need to be addressed, they will work with NRC to resolve them. The Division has already used existing communication channels with both CP&L and NRC to begin monitoring this issue. I would encourage you to address any concerns you have on this licensing action directly to the NRC. However, should you have any questions regarding the specifics of this proposal, please feel free to contact DRP's Director, Richard M. Fry, for any assistance that the Division can give you in getting either NRC or CP&L to provide the information needed to address your concerns.

Let me assure you that this Department is committed to assuring that the citizens of North Carolina are adequately protected from radiation exposures. Toward that end, we will carefully follow the radiation safety reviews on the nuclear related matters raised in your letter.

Sincerely,

[Handwritten signature of Wayne McDevitt]

Wayne McDevitt

cc: Richard M. Fry

F117

NORTH CAROLINA DEPARTMENT OF  
ENVIRONMENT AND NATURAL RESOURCES

NOV 12 1998

JAMES B. HUNT JR.  
GOVERNORWAYNE McDEVITT  
SECRETARY

Rosemary I. Waldorf, Mayor  
Town of Chapel Hill  
306 North Columbia Street  
Chapel Hill, North Carolina 27516

Dear Mayor Waldorf:

This is in response to your October 7, 1998 letter concerning the Carolina Power and Light Company (CP&L) proposal to use the two additional spent nuclear fuel pools at their Shearon Harris Nuclear Power Plant.

As you are aware, the regulatory responsibility for nuclear power plants and the transportation and ultimate disposal of spent nuclear fuel rests with the Federal government. Members of our Division of Radiation Protection (DRP) over the years have been actively involved in monitoring both the efforts of the U.S. Nuclear Regulatory Commission (NRC) and the Department of Energy as they relate to their licensing actions associated with the power plants and the spent fuel disposal efforts.

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Let me assure you that this Department is committed to assuring that the citizens of North Carolina are adequately protected from radiation exposures. Toward that end, we will carefully follow the radiation safety reviews on the nuclear related matters raised in your letter.

Sincerely,

Wayne McDevitt

cc: Richard M. Fry

**ORANGE COUNTY BOARD OF COMMISSIONERS**

**A RESOLUTION REGARDING PROPOSED EXPANSION OF HIGH LEVEL  
RADIOACTIVE WASTE STORAGE FACILITIES  
AT CP&L'S SHEARON HARRIS NUCLEAR POWER PLANT**

**WHEREAS**, on September 15, 1998, the Orange County Board of Commissioners were advised as to plans for the expansion of the high level radioactive waste storage facilities at Carolina Power & Light's Shearon Harris nuclear power plant in Chatham County; and

**WHEREAS**, the Board of County Commissioners have been apprised of the potential risks inherent with the doubling of the storage capacity of the temporary storage pools for high level radioactive waste for the purpose of long term storage of high level radioactive waste, not only from the Shearon Harris plant, but also from two other nuclear power plants from elsewhere in North and South Carolina; and

**WHEREAS**, citizens of Orange County who are alarmed about the plans to expand the waste storage capacity at the Shearon Harris facility and the lack of public input into the approval process for those plans have requested that the Board of County Commissioners intervene in the plan approval process on behalf of the citizens of Orange County to ensure that no such expansion occurs without the public's knowledge and consent; and

**WHEREAS**, on November 9, 1998, the Orange County Commission for the Environment passed a resolution asking that Board of County Commissioners request that an appropriate entity hold public hearings in which Carolina Power and Light will provide additional information about its plans to expand its storage capacity at Shearon Harris and respond to questions about long term storage of high level radioactive wastes:

**NOW, THEREFORE BE IT RESOLVED THAT** the Orange County Board of Commissioners requests that the North Carolina Department of Environment and Natural Resources and the Nuclear Regulatory Commission conduct public hearings in which Carolina Power & Light and appropriate regulatory staff: 1) explain the plans to expand the storage facilities for high level radioactive waste at the Shearon Harris nuclear power plant; 2) outline the risks or lack thereof and explain the risk assessment methodology employed to develop risk projections related to the use of facilities designed for short term storage of high level radioactive wastes for long term storage; 3) outline the risks or lack thereof and explain the risk assessment methodology employed to develop risk projections associated with the transportation and handling of materials from other distant nuclear power generating facilities; and 4) accept and consider public comments relative to support for or opposition to operating or expanding such a facility in this area.

This, the 17<sup>th</sup> day of November, 1998

\_\_\_\_\_  
Margaret W. Brown, Chair

DRAFT - PASSED 11/17/98

F/18

## CP&L/Nuclear Industry Process:

1. Secret Negotiations: CP&L/NRC  
Negotiations determine what information is included with application.  
With this project, quiet negotiations for 18 months.
2. Announcement Hidden  
Notification of application buried in tech-speak in voluminous daily Federal Register.
3. Barriers to Comprehension of Plan  
Application is hundreds of pages of technical documents at NRC....other documents unavailable to public.
4. Accelerated, Unrealistic Response Time  
Once posted in Federal Register, the public must race (30 days) to obtain, comprehend, and submit written comments on the application.
5. No Public Hearing
6. NRC/CP&L Meetings---Maryland
7. Legal Intervention: Atomic Safety Licensing Board  
Pro-Industry licensing arm of NRC: Rubber stamp expected.  
Barriers even to qualify for intervention.
8. Legal Appeal: Federal Court  
Costly and uncertain.
9. Legal: Appellate Court
10. Legal: Supreme Court

*Note: These guidelines are our best understanding of the way the process works --- based on discussions with attorneys, the Nuclear Regulatory Commission and the Nuclear Information Resource Service.*

## How A Democratic Process Should Work:

1. All Information CP&L Has Is Made Public
2. Public Notification of Expansion Application  
News release and ads, public notification of all state and local governments.  
Announcements to customers in bills.
3. Clear Communication with Citizens and Local Governments  
Non-technical plan summary prepared for non-engineers.
4. A Fair Timetable with Fair Notice.  
Written comments are only one element.
5. Local Public Hearings
6. All Meetings In Raleigh  
All citizens should be able to attend and have questions addressed.
7. Independent Review: Panel of Non-Industry NC Scientists  
The NRC has been long-criticized for catering to the industry.  
Area scientists can provide key input to ensure safest plan.

**8, 9, 10.**

*The public should not have to hire lawyers and jump through hoops to ensure its fundamental democratic rights to scrutinize a plan with such far-reaching implications should a nuclear accident occur*

**Nuclear Safety Is Not A Private Matter**  
*NC WARN is calling on CP&L to adopt a democratic process respecting the public's right to know*

Waste Awareness and Reduction Network

**NC WARN** 

# **United States Nuclear Regulatory Commission**

**Office of Public Affairs, Region II**

**61 Forsyth Street, Suite 23T85, Atlanta, GA 30303**

**Tel. 404-562-4416 or 4417 Fax 404-562-4980**

**Internet: [kmc2@nrc.gov](mailto:kmc2@nrc.gov) or [rdh1@nrc.gov](mailto:rdh1@nrc.gov)**

No: II-99-01draft  
Contact: Ken Clark or Roger Hannah

FOR IMMEDIATE RELEASE  
(Monday, January 4, 1999)

## **NRC RECEIVES REQUEST FROM CP&L FOR USE OF ADDITIONAL HARRIS PLANT SPENT FUEL POOLS**

The Nuclear Regulatory Commission has received a request from Carolina Power & Light Company to amend the license of the Harris nuclear plant to place two additional spent fuel pools into service.

The plant was originally designed for four units, but only one was completed. However, the plant's fuel handling building does have four spent fuel pools as originally planned. CP&L currently uses two of those pools for spent fuel from the Harris plant and some additional spent fuel from the company's other two nuclear plants.

CP&L is asking the NRC staff to approve the storage of spent fuel in the two additional pools through a license amendment and the NRC staff will carefully review the company's application, including analyses of changes to the cooling systems for the additional pools, ~~before approving the amendment.~~

#

E/19

## ENGINEERING BRANCH INSPECTION PLAN

**Inspection of:** HARRIS

**Inspection Dates:** November-15 - 19, 1999      **Report Numbers:** 50-400/99-12

**Type of Inspection:** Special Team - Spent Fuel Pool Expansion

**Planned Inspection Hours:** 150

**Inspector(s):** J. Lenahan, B. Crowley, K. Heck (NRR), J. Davis (NRR), and D. Naujock (NRR)

**Inspection Objectives:** Review construction procedures and records associated with installation, quality control, and testing of "C" and "D" spent fuel pool piping. Review procedures and records applicable to protection and preservation of equipment to be placed in service as part of the "C" and "D" fuel pool system. Specific inspection requirements are specified in TI 2515/143.

Inspection observations will be compared with applicable licensee procedures, Technical Specifications, the UFSAR, design basis documents, and licensee commitments.

**Past Plant Performance in This Inspection Area:** n/a

**Projects Branch Chief/Senior Resident Perspective:** N/A

**Outstanding Items To Be Reviewed:** NONE

**Lodging During Inspection:** Hampton Inn, Cary, NC 919-859-5559

**In Charge Of Exit Interview:** Lenahan

**Date Projects Informed:** October 15, 1999

**Date Licensee Informed:** October 15, 1999      **Licensee Contact:** Mike Wallace (919-362-2360)

**Branch Chief's Instructions:**

**Approving Branch Chief:** *Kerry D. Landis* **Date:** 11/4/99

**Date Plan Provided to Projects:** November 4, 1999

**Copies Provided:**

DRS Branch Chief: K. Landis

Projects Branch Chief: B. Bonser

Projects Engineer: G. Mac Donald

Original To Branch Files: Engr Br

Inspectors: Lenahan, Crowley

NRR Project Manager: R. Laufer

*E/20*



**Brown, Eva**

---

**From:** Manning, Pat  
**Sent:** Thursday, January 14, 1999 10:08 AM  
**To:** All Exchange CP&L Personnel (1); Barber, Kasey; Beaty, Becky; Beckwith, Elizabeth; Capps, Rusty; Carr, Steve; Castellow, Carl; Clanton, Ron; Clayton, Kate; Duncan, Ginger; Eaton, Gregg; Elliott, John; Eudy, Ken; Foster, Bill; Gimbert, Sandi; GST - Employees; HR-HR Business Services; Knox, Dan; Knox, Tom; Kristof, Bryan; Lee Prevost; Lewis, Kevin; McKeown, Richard; Meehan, Steve; Miller, Glenn; Morehead, Bob; Murphy, Kaly; O'Dell, Donny; Otto, Tracie; P&SS - Admin; P&SS - OHS4; Parke, Dan; PE&RAS Employees; Perkins, Barbara; RSS - Sales & Services; Scott, Bill; Spain, Jack; Strategic Planning - Employees; Tate, Forrest; Taylor, John; Thompson, Darryl; Tindall, Barbara; Webb, Carl; Wilson, Dori; Wyckoff, Sandy  
**Subject:** Infobulletin (Company announces open house at Harris Visitors Center)

**Company announces open house at Harris Visitors Center**

The company has announced that it will hold an informational open house at the Harris Plant Visitors Center Thursday, Feb. 4, from 7 to 10 p.m.

Our objective in hosting an open house is to share information with community residents – and answer their questions concerning spent-fuel storage. Company representatives also will make available information, exhibits and displays related to other aspects of our service to 1.2 million customers.

Meanwhile, the Nuclear Regulatory Commission (NRC) announced Wednesday that its preliminary assessment shows there is "no significant hazard" regarding CP&L's request for permission to activate two already-built spent-fuel storage pools at the Harris Nuclear Plant.

In making the announcement, the NRC indicated that it had reached a preliminary determination that CP&L's plan does not significantly reduce the margin of safety or increase the consequences of accidents that the plant is designed and licensed to handle.

We announced our spent-fuel plan last fall. The Harris Plant, which began commercial operation in 1987, was originally designed for four nuclear units. Common support facilities, including a fuel handling building, were required to be built to support the operation of Unit 1, the first unit to begin operation. As plans and regional electrical demand projections changed, the remaining three units were canceled.

CP&L has safely stored spent fuel in the two operating pools at the Harris Plant for 11 years, and the activation of the two other existing pools is aimed at preparing for future storage needs. The Harris Plant stores spent fuel from its own reactor and from the Brunswick and Robinson plants. The fuel is in the form of ceramic pellets encased in 12-foot-long steel tubes.

Ultimately, the U.S. Department of Energy is responsible for building a permanent storage facility. The federal facility is scheduled to open in 2010.

"CP&L and its customers are in a much better position than many others in that the Harris Plant has enough spent-fuel storage capability to handle all the spent fuel from CP&L's nuclear units through the end of their current operating licenses," said Scotty Hinnant, senior vice president and chief nuclear officer. "Many other utilities are having to build dry cask storage facilities in order to keep plants

operating. Under our current plan, customers will benefit from an economic and safety standpoint in that we are using existing facilities and a proven technology."

CP&L's plans call for the third pool to be in service in 2000. The fourth pool would not be needed for several years thereafter.

"We support the NRC's review process, which accommodates public participation," Hinnant said. "Beyond that, we want to ensure that our neighbors have an opportunity to tell us what's on their minds, and to learn more about CP&L and our plans."

During 1998, the company's nuclear plants produced nearly 45 percent of the electricity generated on behalf of CP&L customers. In fact, nearly half of the total electricity generated by CP&L and Duke Power in 1998 came from nuclear power plants.

###

**Corporate Communications**

2009 Chapel Hill Road  
 P.O. Box 61051  
 Durham, NC 27715-1051  
 Phone: (919) 490-0747 Fax: (919) 493-8614  
 E-Mail Address: NC-WARN@POBOX.COM

Waste Awareness and Reduction Network

**NC WARN**



February 2, 1999

C.S. Hinnant  
 Senior Vice-President and Chief Nuclear Officer  
 Carolina Power & Light Company

Dear Mr. Hinnant:

We are surprised and disappointed that CP&L has decided to reject an opportunity to cooperate with area governments and NC WARN to openly address safety issues regarding your proposed expansion of High-Level waste storage at the Harris nuclear plant. Surprised because, as you know, various CP&L officials have publicly stated – numerous times over the past two months – that CP&L will address all technical questions which arise about the planned expansion.

Those pledges now ring hollow after your phone call to me Friday evening, when you declined to participate in roundtable meetings with technical advisors for local governments and our organization; you indicate that you believe the process is “best handled through the Nuclear Regulatory Commission” After moving in a more open direction in the past 2 months – an important precedent for your industry – CPL has now redrawn the infamous curtain of nuclear secrecy and chosen to hide behind the NRC’s barriers to the public regarding nuclear safety issues.

Since December, CP&L has repeatedly expressed eagerness to hear the public’s technical concerns – even criticizing NC WARN for not voicing those concerns prior to receiving the license application. In local governments throughout the area, we worked through a democratic process, where CPL tried but lost its attempt to persuade elected governments not to seek independent review. Yet you continued to insist that you want an open process and would answer the technical questions. But now that we have technical advisors reviewing your plan, and when we had begun a productive dialogue with CP&L, you’ve retracted your promises and closed the door to the public.

You say you “will still answer concerns by elected officials.” Do you expect them to wade through the 300-page, highly technical application which NRC deemed “very complex” – and submit their own questions to CP&L at an Open House without utilizing scientists to support the public’s understanding of your plan? The fact that you now choose to hide behind the NRC, a regulatory agency notorious for its bias toward the nuclear power industry, raises a very disturbing question: What are you afraid of?

As I stated to you on the phone, even ordinary people across the country who know nothing about nuclear issues, have heard of NRC’s notoriety and its decades of consistent – and extremely dangerous – capitulation toward your industry. No doubt that protection is the basis for CP&L’s decision.

We also challenge you to reject the smear campaign you’ve already begun, whereby you try to discredit Dr. Gordon Thompson, NC WARN and individual elected officials with name-calling and attempts to “divide and conquer” the coalition of governments working with our organization. If, as you claim, Dr. Thompson is “anti-nuclear,” does that mean you cannot handle his tough questions? Reasonable people can hear his and CP&L’s positions and come to their own conclusions about the safety of the CP&L expansion.

Your actions demonstrate great disrespect for the public’s fundamental democratic right to know about potential risks, and an insult to the intelligence of area’s citizens and elected officials. Do you really think they will accept your “Open Houses” as a substitute for meaningful dialogue with scientists about safety issues?

Advisory Board: Dr. Paul Connett ● Ellen Connett ● Pat Costner ● Dr. Gerald Drake ● Billie Elmore ● Rev. Isaiah Madison ● William Sanjour ● Peter MacDowell

F/22

As you know, public meetings will still be held; you have chosen that CP&L's voice will not be part of the public dialogue. We find it interesting that you prefer to spend vast sums on image advertising, corporate lobbyists and well-spread philanthropy to "inform" the public about your company and its issues. And to lobby elected officials and media quietly while rejecting the opportunity to sit with your scientific peers and address substantive technical and safety issues. Again, what does this tell the public about your confidence level in your own waste management practices?

You apparently are willing to gamble that the public and area leaders will lose interest in this issue. But we believe citizens throughout the region will keep watching, asking questions, and that they will remember this insult from CP&L's - and your apparent reservation in openly justifying your plan for the nation's "spent" fuel site.

We are issuing a call to all elected officials to reject CP&L and Duke Power's private lobbying and campaign contribution influence on this issue and other matters central to public well-being, and to call on these corporations to begin a serious internal policy review which may one day lead to an understanding and acceptance that you have a responsibility to replace - or at least supplement - your "public relations" methodologies with genuine corporate citizenship. You will certainly learn that this society is not only starving for real democracy regarding issues of radioactive pollution - we will increasingly demand it.

Mr. Hinnant, as a public advocacy organization, we are well aware and increasingly concerned about the great national dilemma within your industry. There is a clear need for much-improved cooperation between corporations, governments, independent scientists and citizens, in order to determine long-term policies regarding nuclear wastes and to maximize the chances of avoiding increasing releases of long-lived radioactive substances into our environmental and the resulting accumulations and potential for great harm to the life on this planet.

The seemingly intransigent problems your industry has created with nuclear wastes are becoming among the most daunting challenges facing our society. You show no ability to handle those challenges within the industry, so unfortunately, you cannot be left to do so in private with the NRC.

Sincerely,



Jim Warren  
Executive Director

cc: Government/citizen steering committee  
Rev. Carrie Bolton  
Harold Taylor  
Gov. James B. Hunt  
Sen. Ellie Kinnaird  
Rep. Joe Mackney  
NRC Administrator Shirley Jackson  
Area local governments

**INSTITUTE FOR RESOURCE AND SECURITY STUDIES**  
**27 Ellsworth Avenue, Cambridge, Massachusetts 02139, USA**  
**Phone: (617) 491-5177 Fax: (617) 491-6904**  
**Electronic mail: irss@igc.apc.org**

ILLUSTRATIONS ACCOMPANYING  
A PRESENTATION

BY

GORDON THOMPSON

TO

THE BOARD OF COMMISSIONERS  
ORANGE COUNTY  
NORTH CAROLINA

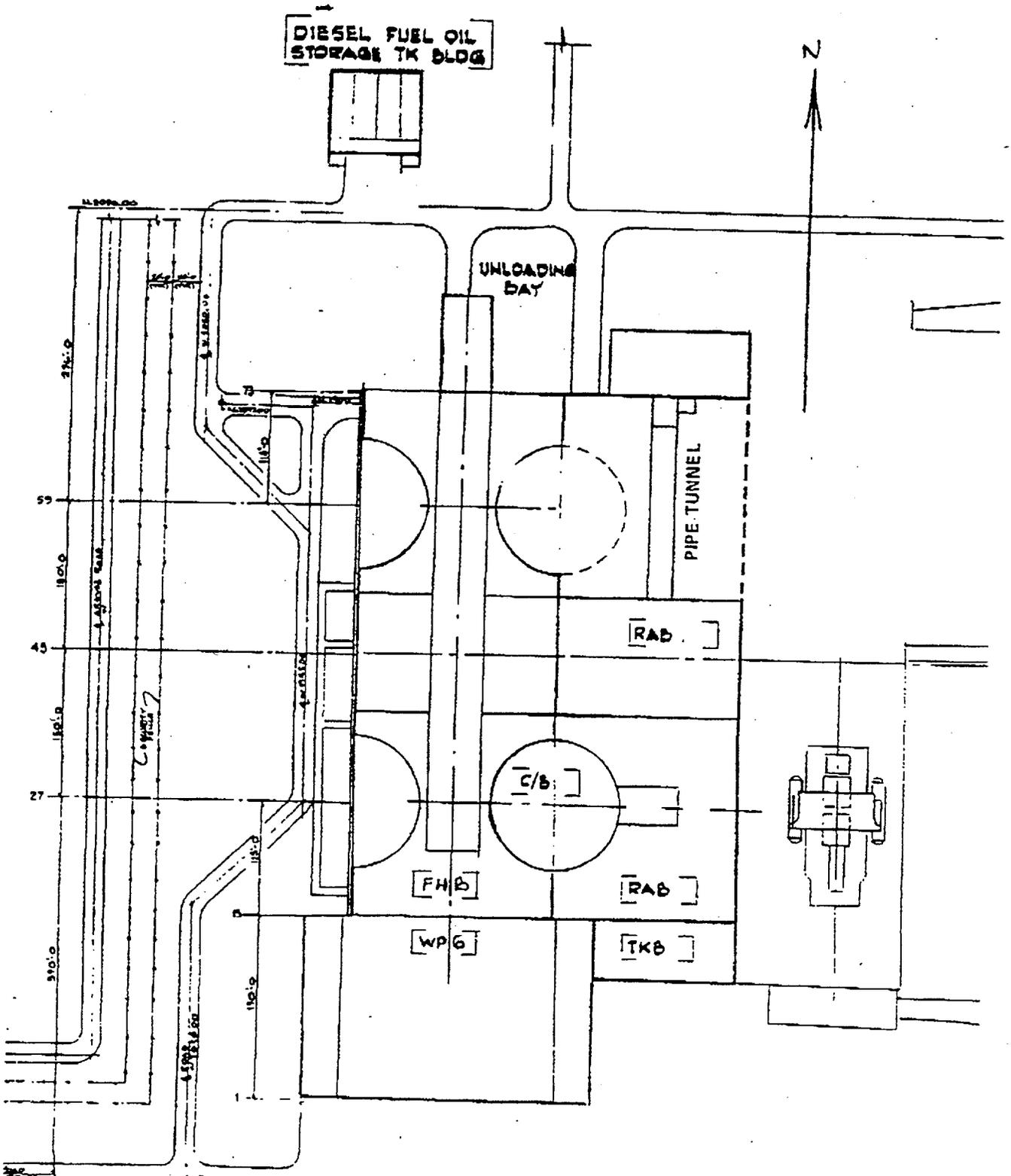
ON

9 FEBRUARY 1999

REGARDING

RISKS AND ALTERNATIVE OPTIONS  
ASSOCIATED WITH SPENT FUEL STORAGE  
AT THE SHEARON HARRIS NUCLEAR PLANT

# General Layout of the Harris Plant



REPORT HI-971750

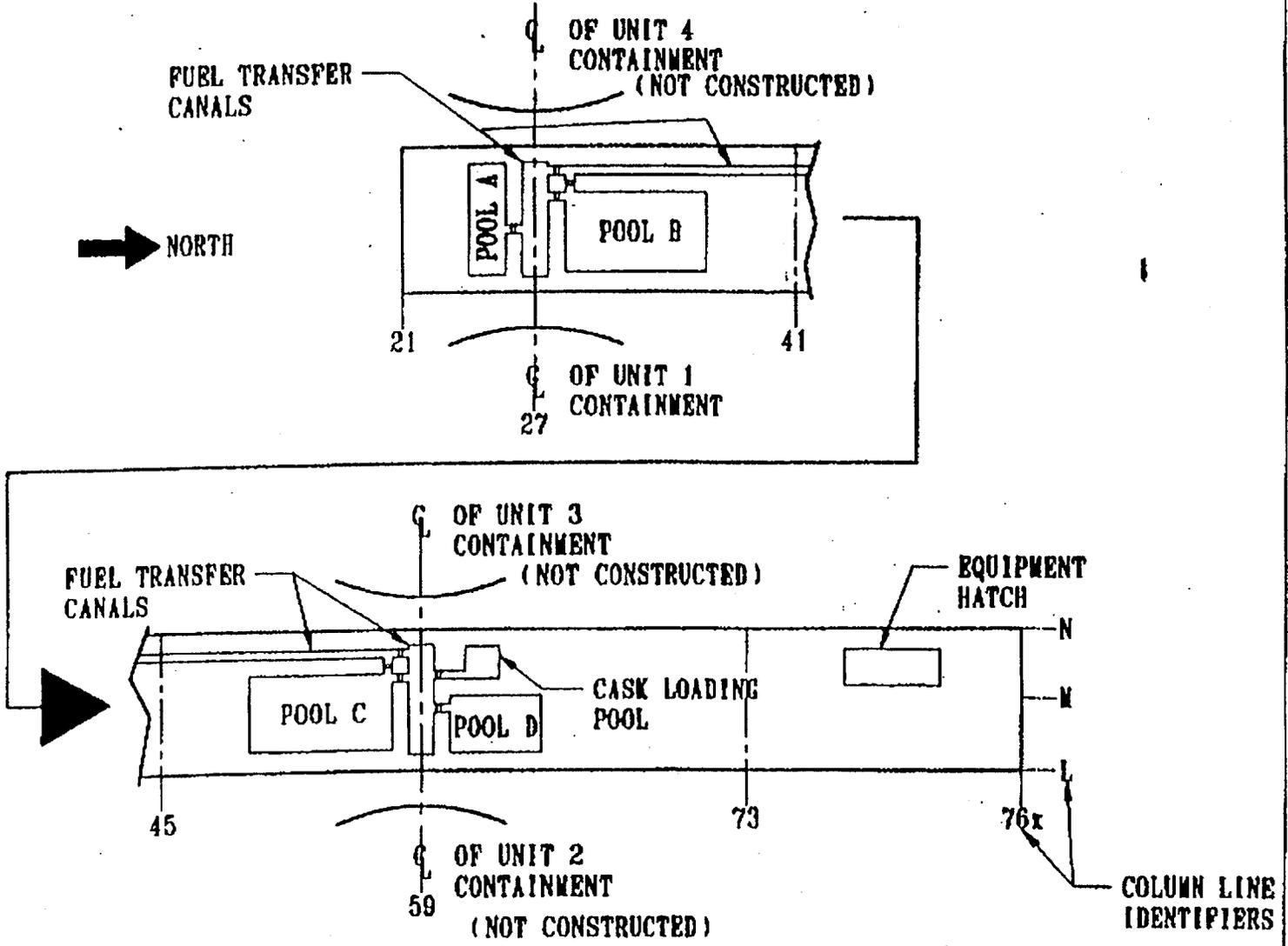
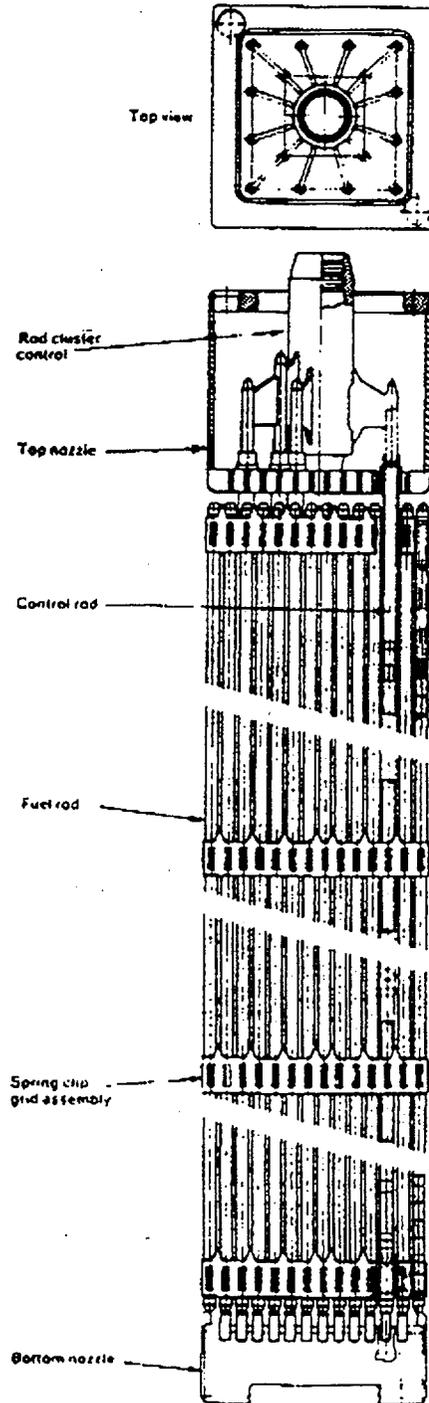
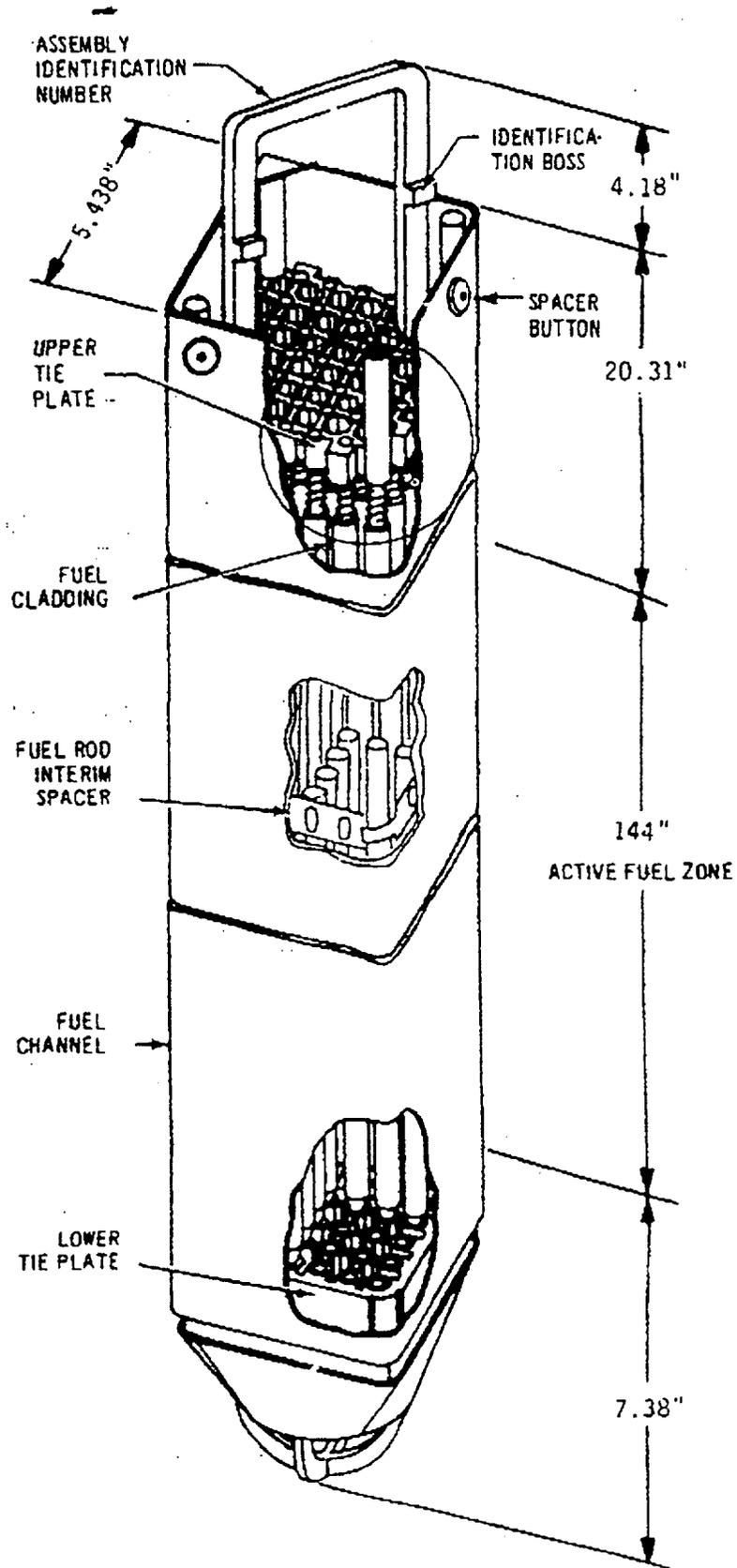


FIGURE 1.1; HARRIS FUEL HANDLING BUILDING PLAN LAYOUT

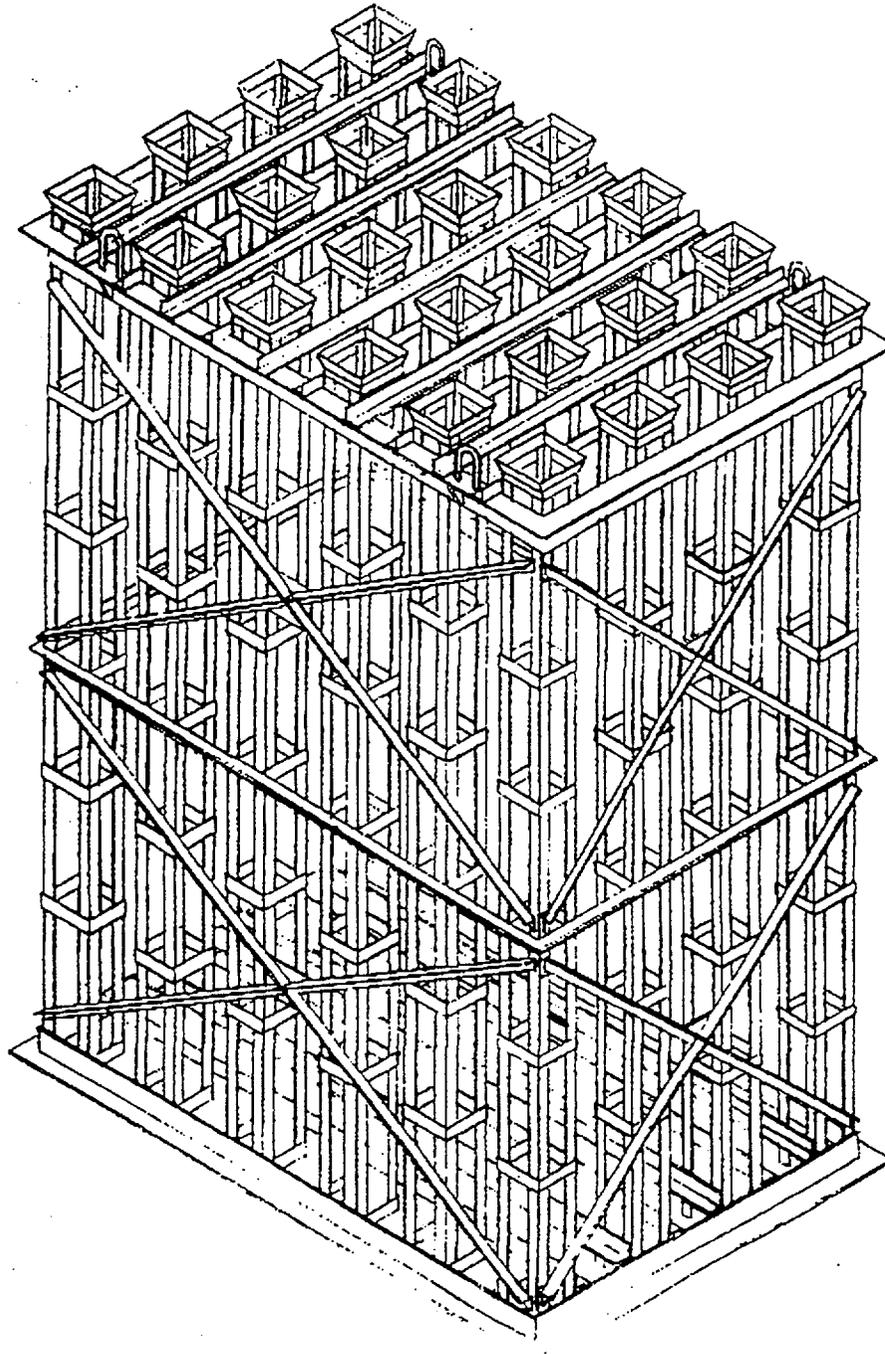
# Typical PWR Fuel Assembly



# Typical BWR Fuel Assembly



# Typical PWR Fuel Storage Rack for Low Density Storage



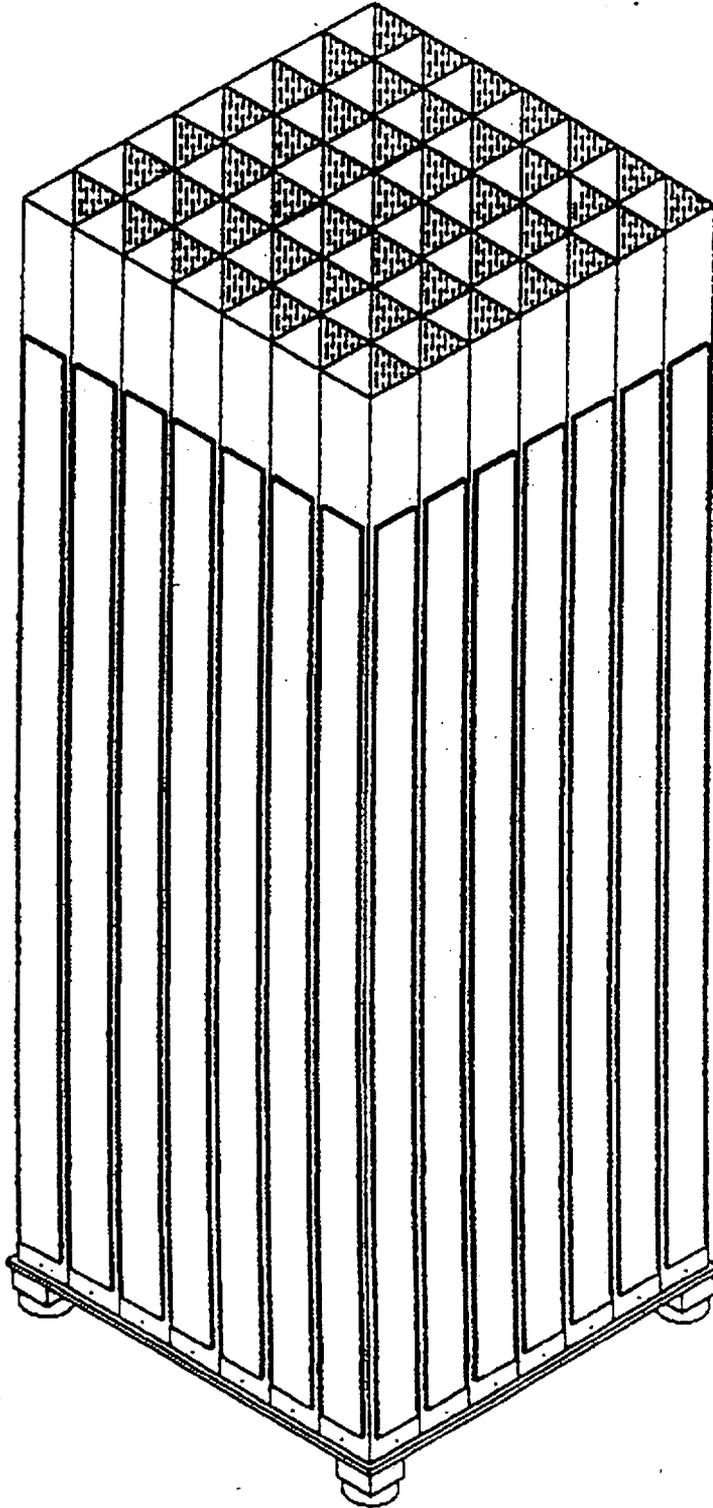
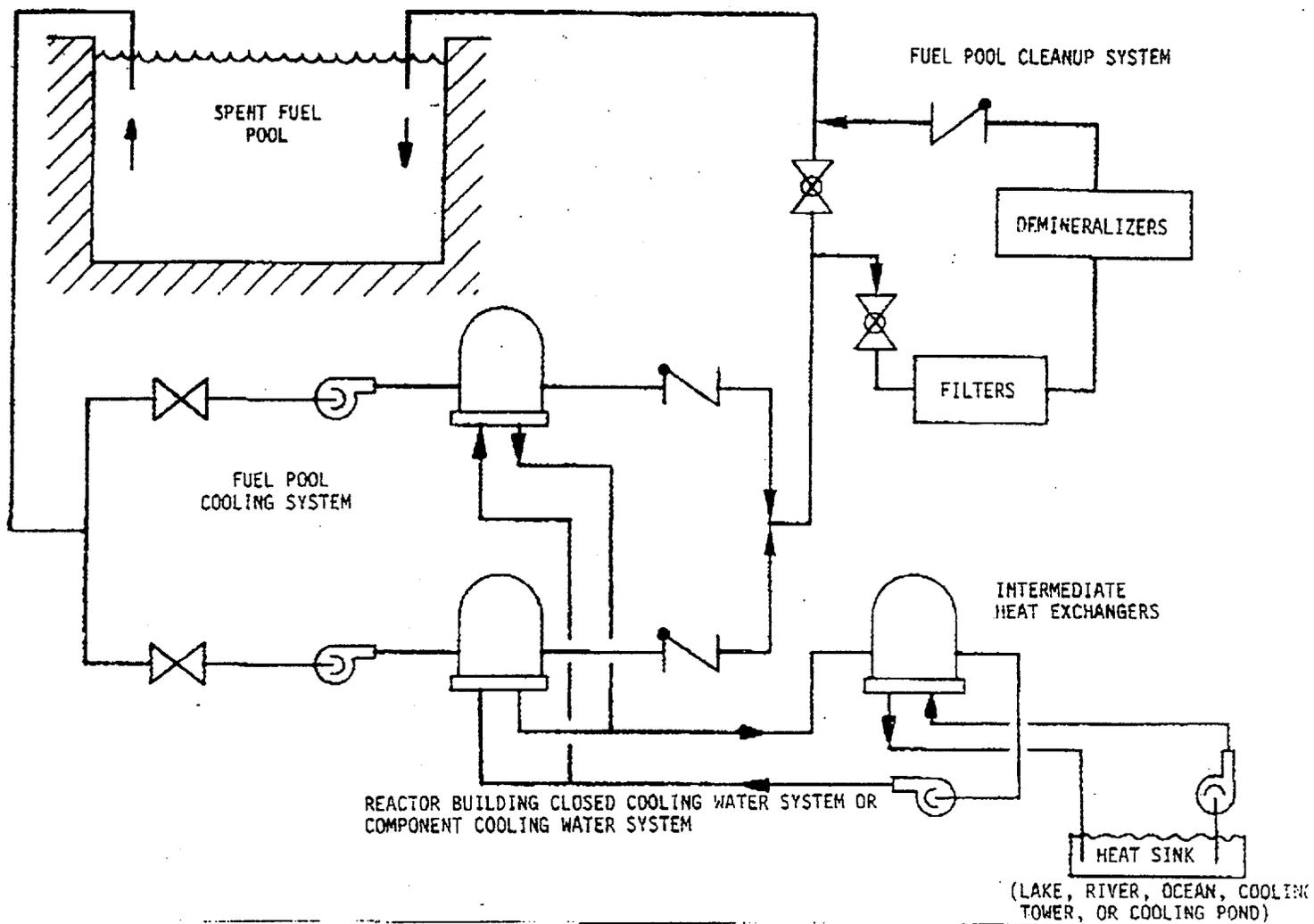


FIGURE 2.1.1; PICTORIAL VIEW OF TYPICAL HARRIS RACK STRUCTURE

# Schematic View of Typical Cooling and Cleanup Systems for a Spent Fuel Pool



## Core of the Harris Reactor

- 157 PWR fuel assemblies
- Center-center distance of 8.5 inches

## Present and Proposed Capacity of the Harris Fuel Pools

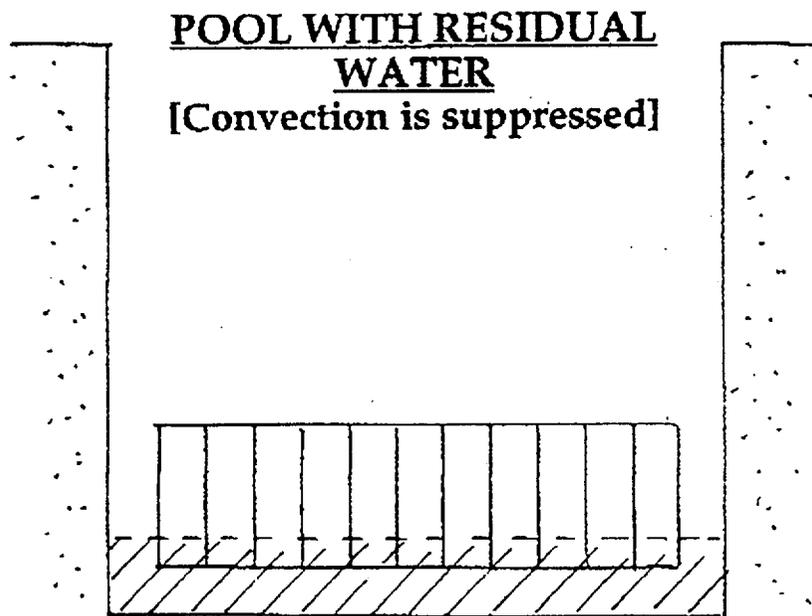
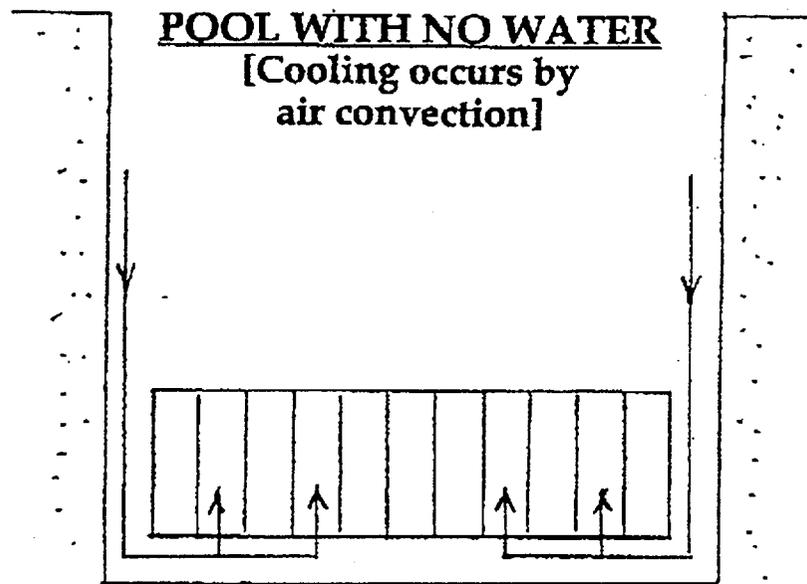
Pool	PWR spaces	BWR spaces	Total
'A'	360	363	723
'B'	768	2178	2946
'C'	927	2763	3690
'D'	1025	0	1025
Total	3080	5304	8384

- Pools A and B now have licensed capacity as listed.
- Pools C and D will acquire the listed capacity in five stages.
- Center-center distance in pools A and B is 10.5 inches for PWR fuel and 6.25 inches for BWR fuel.
- Center-center distance in pools C and D will be 9.0 inches for PWR fuel and 6.25 inches for BWR fuel.

## Some Technical Issues Related to Activation of Pools C and D

- When the Harris plant was designed, cooling of pools C and D was to be provided by the systems of Unit 2. That unit was never built.
- The bounding heat load for pools C and D will be 15.6 million BTU/hour. The component cooling water (CCW) system for Unit 1 cannot accommodate that load.
- CP&L's short-term plan (through 2001) is to limit the heat load in pools C and D to 1.0 million BTU/hour, and to exploit the margin in the existing CCW system so as to accommodate that heat load. This plan constitutes an "unreviewed safety question" because the CCW system serves safety functions at the Harris reactor.
- CP&L's longer-term plan is to upgrade the CCW system. That upgrade has not yet been designed.
- The PWR racks in pools C and D will not be safe against criticality for low-burnup or high-enrichment fuel.
- Some quality assurance documentation is not available for completed portions of the cooling system for pools C and D.

# Cooling of a Fuel Pool in the Event of Total or Partial Loss of Water



## Hazard Potential of the Harris Fuel Pools

- A key indicator of hazard is the pools' inventory of cesium-137, which has a half-life of 30 years.
- At shutdown the Harris reactor contains about 150,000 TBq (45 kilograms) of cesium-137, in 157 PWR fuel assemblies.
- At full capacity, the Harris pools will contain 3,080 PWR assemblies and 5,304 BWR assemblies. A BWR assembly will contain about 1/4 the cesium-137 inventory of a PWR assembly of the same age after discharge.
- The 1986 Chernobyl accident released about 90,000 TBq (27 kilograms) of cesium-137. Official estimates indicate that this exposure will cause 50-100 thousand extra cancer fatalities worldwide over the next 70 years.

## NRC-Approved Dry Spent Fuel Storage Designs

Vendor	Storage Design Model	Capacity (Assemblies)	Storage Design Approval Date	Certificate of Compliance Approval Date
General Nuclear Systems, Incorporated	Metal Cask CASTOR V/21	21 PWR	09/30/1985	08/17/1990
Vectra Technologies, Incorporated	Concrete Module NUHOMS-7	7 PWR	03/28/1986	
Westinghouse Electric	Metal Cask MC-10	24 PWR	09/30/1987	08/17/1990
Foster Wheeler Energy Applications, Incorporated	Concrete Vault Modular Vault Dry Store	83 PWR or 150 BWR	03/22/1988	
NAC International	Metal Cask NAC S/T	26 PWR	03/29/1988	08/17/1990
NAC International	Metal Cask NAC-C28 S/T	28 Canisters (fuel rods from 56 PWR assemblies)	09/29/1988	08/17/1990
Vectra Technologies, Incorporated	Concrete Module NUHOMS-24P	24 PWR	04/21/1989	
Transnuclear, Incorporated	Metal Cask TN-24	24 PWR	07/05/1989	11/04/1993
NAC International	Metal Cask NAC-128/ST	28 PWR	02/01/1990	
Pacific Sierra Nuclear Associates	Ventilated Cask VSC-24	24 PWR	03/29/1991	05/07/1993
Vectra Technologies, Incorporated	Concrete Module Standardized NUHOMS-24P NUHOMS-52B	24 PWR 52 BWR	N/A	01/23/1995
NAC International	NAC-STC	26 PWR	07/18/95	

## NRC Dry Spent Fuel Storage Licensees

Reactor Name Utility	Date Issued	Vendor	Storage Model
Surry 1, 2 Virginia Electric & Power Company	07/02/1986	General Nuclear Systems, Incorporated	Metal Cask CASTOR V/21
H. B. Robinson 2 Carolina Power & Light Company	08/13/1986	Vectra Technologies, Incorporated	Concrete Module NUHOMS-7
Oconee 1, 2, 3 Duke Power Company	01/29/1990	Vectra Technologies, Incorporated	Concrete Module NUHOMS-24P
Fort St. Vrain Public Service Company of Colorado	11/04/1991	Foster Wheeler Energy Applications, Incorporated	Modular Vault Dry Store
Calvert Cliffs 1, 2 Baltimore Gas & Electric Company	11/25/1992	Vectra Technologies, Incorporated	Concrete Module NUHOMS-24P
Palisades Consumer Power Company	Under General License	Pacific Sierra Nuclear Associates	Ventilated Cask VSC-24
Prairie Island 1, 2 Northern States Power Company	10/19/1993	Transnuclear, Incorporated	Metal Cask TN-40
Point Beach Wisconsin Electric and Power Company	Under General License	Pacific Sierra Nuclear Associates	Ventilated Concrete VSC-24
Davis-Besse Toledo Edison Company	Under General License	VECTRA Technologies Incorporated	Concrete Module NUHOMS-24P