

# Success At CP&L's Brunswick Plant

*Thanks to the dedication and hard work of employees, the Brunswick Plant is finishing a successful year:*

- Modification of the Unit 1 shroud is complete
- Unit 2 has set a new record for successful operation
- Regulatory agencies have noted plant success

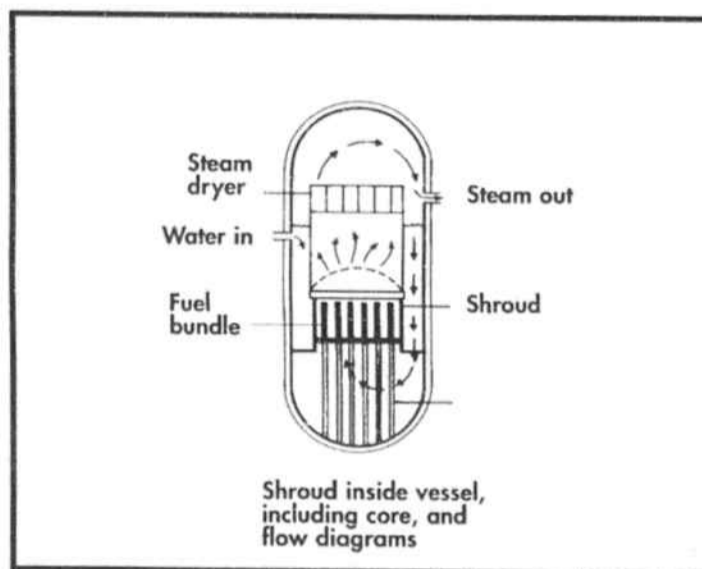


## Modification of the Unit 1 Shroud

A modification to replace a welded connection in the shroud of Unit 1 with a bolted connection is complete, and the unit is being prepared for restart. The modification restores the shroud to its original design margins for strength.

The shroud is a piece of equipment that sits inside the six-inch-thick pressure vessel. The shroud is made of inch-and-a-half-thick stainless steel. It encircles the nuclear fuel inside the reactor. The shroud directs the flow of water inside the reactor, and provides lateral stability to the fuel elements that make up the reactor core.

During operation, water is pumped into the reactor vessel. The walls of the shroud direct the water to flow down between the shroud and the reactor vessel wall, and then back up over the nuclear fuel, where the water is heated to form steam.

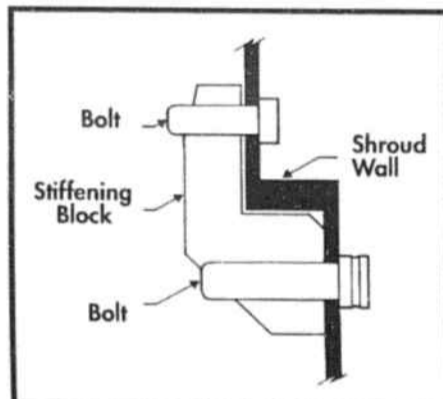


## Cracking in The Shroud

In July of this year, we inspected the shroud of Unit 1 and found evidence of what is called "intergranular stress corrosion cracking" on the inner wall of the shroud. This is a type of hair-line cracking that affects stainless steel.

A detailed examination using specially-designed diagnostic equipment showed that even though the shroud is strong enough today to perform its intended function, cracks could grow so that over the next several years the shroud might not withstand an extremely strong earthquake.

Based on this information, we designed a modification that replaces the welded connections near the top of the shroud with a bolted connection. The diagram at right shows an expanded view of the upper part of the shroud and the modification that was installed.



The Brunswick Plant was the first nuclear plant in the country to install this modification. The modification is designed to last for the life of the facility. When Unit 2 is taken out of service for a refueling outage this spring, the shroud of that unit will be examined in detail to determine if any bracing or stiffening is needed.

## A Thorough Review

In October, a local anti-nuclear organization and a group of Washington lawyers filed a document with the Nuclear Regulatory Commission claiming that CP&L had known about shroud cracks since 1984, but had concealed that information.

We promptly began a complete technical review, and asked the group making the allegation for more information. They elected to withhold the information they claimed to have, and refused to provide any information to assist the investigation.

A panel of professional outside consultants and two senior CP&L officials with no involvement with Brunswick Plant prior to 1992 sifted through thousands of pages of documents, interviewed current and former employees and contract workers, and reviewed videotape inspections in other parts of the reactor vessel. **After an intensive examination, the panel found NO EVIDENCE to support the accusations.** We made the results of our review public and provided copies of our report to the Nuclear Regulatory Commission.

The NRC has denied the group's petition to shut down the plant and the U.S. Justice Department found no basis to proceed with the group's request to conduct a separate investigation.

## Unit 1 Is Preparing For Restart

With work on the shroud complete, preparations are underway to refuel Unit 1 and prepare for restart of the unit in about a month. Once refueling and checkout of plant systems is complete, the unit will be restarted using the same type of deliberate, systematic process that was used to restart Unit 2 last spring.

## Unit 2 Sets New Operating Record

On December 23, 1993, Unit 2 of the Brunswick Plant set a new continuous run record of 220 days. A continuous run means that the plant has been on line, connected with the CP&L system, and producing electric power seven days a week, 24 hours a day, without so much as a minute's interruption or time off line for maintenance or repairs.

## Plant Success Noted By Regulators

Earlier this month, the Nuclear Regulatory Commission issued its periodic Systematic Assessment of Licensee Performance (SALP). This report graded Brunswick performance over the last year in four areas:

Area Evaluated	Evaluation
•Operations	✓Superior
•Maintenance	✓Good
•Engineering	✓Good
•Plant Support	✓Superior

The report cited significant improvements at the Brunswick Plant:

"During this SALP period, corporate and site management's attention to plant safety resulted in excellent oversight and control of plant activities"....."evidenced by a focus on safety standards, significantly improved material condition of the plant and a very successful operating record for Unit 2 since initial restart in April 1993....."

This positive report reflects the commitment of Brunswick Plant employees to achieve World Class performance. Where areas need improvement, steps are already underway to improve. The report was discussed in a public meeting on December 16, and copies of the report are available in the NRC's local public document room at the University of North Carolina at Wilmington library.

Dear Neighbors,

This letter is a follow-up to a letter I wrote you earlier this fall when the news was full of stories about cracks in the Unit 1 shroud.

As I said in that letter, the issue has never been one of the current safety of the plant. It is an engineering issue, and we have dealt with it as an engineering challenge.

Through the skill and hard work of your neighbors who work at the plant, and the General Electric Company, the modification of the shroud has been completed. The shroud has been restored to its original design margins, and the reactor is being prepared for refueling. We expect to return the unit to service in late January.

During the time the shroud modification was in the news, a local anti-nuclear group and some Washington lawyers who call themselves the "National Whistleblower Center" made the claim that people at the plant have known about the shroud crack and had covered it up. This is just not true.

We asked these people for proof, but they refused. We initiated our own technical review. In order to get an unbiased perspective, we asked experienced nuclear managers who have recently joined the company to head the review, and we staffed the team with outside consultants who are experts in this area.

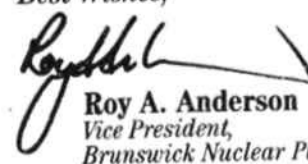
The result of this review is that there is no basis in fact for this allegation. The NRC has denied this group's request to shut down the Brunswick Plant and the Justice Department found no basis to conduct a separate investigation as was requested by the group.

As we return Unit 1 to service, and as we continue to operate Unit 2, I want to give you the assurance of your neighbors who work at Brunswick Plant that we will never ignore a problem or withhold information that could affect your safety. We just don't do business that way.

I also want to thank the employees of the Brunswick Plant for their hard work and dedication that led to a continuous operating record of 220 days for Unit 2. Because an electric generating plant consists of many systems operating together, achieving a continuous run of this length is a statement of the quality of the work done during the maintenance period before restart, and of the training, skill and professionalism of the people who operate and maintain the plant during power operations.

We take pride in our participation in the community and in the service we provide to the region. Likewise, we want to perform so that our neighbors can take pride in the Brunswick Plant as a part of the larger community.

Best Wishes,

  
 Roy A. Anderson  
 Vice President,  
 Brunswick Nuclear Plant