DEC 0 2 1982

Dr. Paul S. Shewmon, Chairman Advisory Committee on Reactor Safeguards U. S. Nuclear Regulatory Commission Washington, D.C. 20555

Dear Dr. Shewmon:

DISTRIBUTION: HDenton ECase WDircks JRoe TRehm VStello Davis RDeYoung RMinoque TMichelson GCunningham PPAS SHanauer RMattson RVollmer HThompson PCheck

BSynder Central Files Docket 50-219 FMiraglia WRussell DEisenhut RPurple JLombardo DCrutchfield RFell CGrimes

SECY-12467 LBerry-12467 MJambor (12467 SEPB File

In your letter to Chairman Palladino dated November 9, 1982, the ACRS presented its views on the Systematic Evaluation Program Integrated Assessment Report for the Oyster Creek Nuclear Generating Station. In summary, this letter supported all of the staff's positions except departed from the staff on leakage detection. The purpose for this memorandum is to respond to the Committee's comments and describe the subsequent resolution on leakage detection and other issues of staff-licensee disagreement.

The licensee has agreed to provide at least one equipment train which is protected against tornado missiles. The licensee has verbally advised the staff that they are evaluating the installation of a portable pump and hose connections to provide cooling water to the emergency condenser. A schedule for this modification is forthcoming. The staff concludes that such a proposal would be acceptable, subject to confirmation that the equipment and water supplies are in protected areas.

For the emergency condenser steam line piping outside containment, the ACRS suggested that visual inspection for leakage should be acceptable if the licensee can demonstrate to the staff that a crack sufficient in size to produce visable leakage is stable. The licensee (GPU) is proceeding along this path and the staff will act on their proposal scheduled to be submitted in February 1983. If the limiting leakage rate cannot support visual inspection, then some form of automatic leakage detection would be required commensurate with the limiting leakage rate.

For reactor coolant pressure boundary leakage detection inside containment, the ACRS judged that this issue should be resolved in a manner acceptable to the NRC staff. The staff and licensee have reached an agreement on this matter. The licensee will evaluate the reliability of their existing sump level monitors and atmospheric activity monitors, and modify them, if required, to detect leakage rates from the limiting stable crack. The licensee will then propose specific action requirements for the Technical Specifications to respond to changes in leakage or a loss of monitoring capability due to system failure or a seismic event. The staff finds this action acceptable.

The licensee has also agreed to all the technical specification change issues that were points of disagreement at the ACRS meeting, including

issues that were point	s of disagree	ment at the A	ions meeting,	mendaring	
OFFICE PDR ADOCK 0000219	·····				
SURNAME	1				*******
DATE					
NDC FORM 318 (10, 90) NDCM 0240	OFFICIAL	RECORD C	OPY		USGPO: 1981-335-960

the one discussed in the preceding paragraph. The licensee will adopt the General Electric Standard Technical Specification limits for reactor coolant iodine. However, the sampling frequency and corresponding actions will be developed on a plant-specific basis as a function of the sampling technique and plant operational characteristics. The licensee has agreed to incorporate reactor protection system surveillance testing requirements into their Technical Specifications for the emergency condenser actuation components and logic channels and testing of the reactor mode switch, high drywell pressure instrumentation and manual start and timing relays, all of which interface or are part of the reactor trip system.

The staff will revise draft NUREG-0822 to reflect the agreements reached between the staff and the licensee and respond to the recommendations from the Committee and the staff's consultants.

Sincerely,

Original Signal by H. R. Denton

Harold R. Denton, Director Office of Nuclear Reactor Regulation

	ORB#5* JLombardo 11/23/82 *SEE PREVIO	ORB#5* DCrutchfie 11/23/82 US CONCURRENC	eld CE		7 1	PPAS EGDODWIN 12-1-82	EDAR WJDArcks 12/2/82
OFFICE	SEPB:DL* RFell:dk	SEPB:DL* CGrimes	SEPB:DL* WRussell	AD:SA:DL* FMiraglia	Drisenhut 11/74/82	DD:NRR ECase 11/ /82	D:NRP HDeocon 12/1 782
DATE .	(10-80) NRCM 0240	11/15/02	OFFICIAL	RECORD	COPY		USGPO: 1981-335-960

the one discussed in the preceeding paragraph. The licensee will adopt the General Electric Standard Technical Specification limits for reactor coolant iodine. However, the sampling frequency and corresponding actions will be developed on a plant-specific basis as a function of the sampling technique and plant operational characteristics. The licensee has agreed to incorporate reactor protection system surveillance testing requirements into their Technical Specifications for the emergency condenser actuation components and logic channels and testing of the reactor mode switch, high drywell pressure instrumentation and manual start and timing relays, all of which interface or are part of the reactor trip system.

The staff will revise draft NUREG-0822 to reflect the agreements reached between the staff and the licensee and respond to the recommendations from the Committee and the staff's consultants.

Sincerely,

Harold R. Denton, Director Office of Nuclear Reactor Regulation

	ORB#5: PM JLombar 10 11/23/82	0R87144 DCN tchf 11/2 782	ield				
	SEPB: DL / M	SEPB: DI	SEPB:DL	Grandel	, Bipl	DD:NRR	D:NRR
OFFICE	RFell:dk	CGrimes	WRussell	FNraglina	DEisenhut	ECase	HDenton
DATE	11/1/182	11/94/82	11/2782	11/12/82	11/29/82	11/ /82	11/ /82
NRC FORM 318	(10-80) NRCM 0240		OFFICIAL	RECORD C	OPY		USGPO: 1981-335-960

TICC PDIC



UNITED STATES NUCLEAR REGULATORY COMMISSION WASHINGTON, D. C. 20555

DEC 2 1982

Dr. Paul S. Shewmon, Chairman Advisory Committee on Reactor Safeguards U. S. Nuclear Regulatory Commission Washington, D.C. 20555

Dear Dr. Shewmon:

In your letter to Chairman Palladino dated November 9, 1982, the ACRS presented its views on the Systematic Evaluation Program Integrated Assessment Report for the Oyster Creek Nuclear Generating Station. In summary, this letter supported all of the staff's positions except departed from the staff on leakage detection. The purpose for this memorandum is to respond to the Committee's comments and describe the subsequent resolution on leakage detection and other issues of staff-licensee disagreement.

The licensee has agreed to provide at least one equipment train which is protected against tornado missiles. The licensee has verbally advised the staff that they are evaluating the installation of a portable pump and hose connections to provide cooling water to the emergency condenser. A schedule for this modification is forthcoming. The staff concludes that such a proposal would be acceptable, subject to confirmation that the equipment and water supplies are in protected areas.

For the emergency condenser steam line piping outside containment, the ACRS suggested that visual inspection for leakage should be acceptable if the licensee can demonstrate to the staff that a crack sufficient in size to produce visable leakage is stable. The licensee (GPU) is proceeding along this path and the staff will act on their proposal scheduled to be submitted in February 1983. If the limiting leakage rate cannot support visual inspection, then some form of automatic leakage detection would be required commensurate with the limiting leakage rate.

For reactor coolant pressure boundary leakage detection inside containment, the ACRS judged that this issue should be resolved in a manner acceptable to the NRC staff. The staff and licensee have reached an agreement on this matter. The licensee will evaluate the reliability of their existing sump level monitors and atmospheric activity monitors, and modify them, if required, to detect leakage rates from the limiting stable crack. The licensee will then propose specific action requirements for the Technical Specifications to respond to changes in leakage or a loss of monitoring capability due to system failure or a seismic event. The staff finds this action acceptable.

The licensee has also agreed to all the technical specification change issues that were points of disagreement at the ACRS meeting, including

the one discussed in the preceding paragraph. The licensee will adopt the General Electric Standard Technical Specification limits for reactor coolant iodine. However, the sampling frequency and corresponding actions will be developed on a plant-specific basis as a function of the sampling technique and plant operational characteristics. The licensee has agreed to incorporate reactor protection system surveillance testing requirements into their Technical Specifications for the emergency condenser actuation components and logic channels and testing of the reactor mode switch, high drywell pressure instrumentation and manual start and timing relays, all of which interface or are part of the reactor trip system.

The staff will revise draft NUREG-0822 to reflect the agreements reached between the staff and the licensee and respond to the recommendations from the Committee and the staff's consultants.

Sincerely,

Original Signed by H. R. Denton

Harold R. Denton, Director Office of Nuclear Reactor Regulation

. *.

LPDR



UNITED STATES NUCLEAR REGULATORY COMMISSION WASHINGTON, D. C. 20555

DEC 2 1982

Dr. Paul S. Shewmon, Chairman Advisory Committee on Reactor Safeguards U. S. Nuclear Regulatory Commission Washington, D.C. 20555

Dear Dr. Shewmon:

In your letter to Chairman Palladino dated November 9, 1982, the ACRS presented its views on the Systematic Evaluation Program Integrated Assessment Report for the Oyster Creek Nuclear Generating Station. In summary, this letter supported all of the staff's positions except departed from the staff on leakage detection. The purpose for this memorandum is to respond to the Committee's comments and describe the subsequent resolution on leakage detection and other issues of staff-licensee disagreement.

The licensee has agreed to provide at least one equipment train which is protected against tornado missiles. The licensee has verbally advised the staff that they are evaluating the installation of a portable pump and hose connections to provide cooling water to the emergency condenser. A schedule for this modification is forthcoming. The staff concludes that such a proposal would be acceptable, subject to confirmation that the equipment and water supplies are in protected areas.

For the emergency condenser steam line piping outside containment, the ACRS suggested that visual inspection for leakage should be acceptable if the licensee can demonstrate to the staff that a crack sufficient in size to produce visable leakage is stable. The licensee (GPU) is proceeding along this path and the staff will act on their proposal scheduled to be submitted in February 1983. If the limiting leakage rate cannot support visual inspection, then some form of automatic leakage detection would be required commensurate with the limiting leakage rate.

For reactor coolant pressure boundary leakage detection inside containment, the ACRS judged that this issue should be resolved in a manner acceptable to the NRC staff. The staff and licensee have reached an agreement on this matter. The licensee will evaluate the reliability of their existing sump level monitors and atmospheric activity monitors, and modify them, if required, to detect leakage rates from the limiting stable crack. The licensee will then propose specific action requirements for the Technical Specifications to respond to changes in leakage or a loss of monitoring capability due to system failure or a seismic event. The staff finds this action acceptable.

The licensee has also agreed to all the technical specification change issues that were points of disagreement at the ACRS meeting, including

the one discussed in the preceding paragraph. The licensee will adopt the General Electric Standard Technical Specification limits for reactor coolant iodine. However, the sampling frequency and corresponding actions will be developed on a plant-specific basis as a function of the sampling technique and plant operational characteristics. The licensee has agreed to incorporate reactor protection system surveillance testing requirements into their Technical Specifications for the emergency condenser actuation components and logic channels and testing of the reactor mode switch, high drywell pressure instrumentation and manual start and timing relays, all of which interface or are part of the reactor trip system.

The staff will revise draft NUREG-0822 to reflect the agreements reached between the staff and the licensee and respond to the recommendations from the Committee and the staff's consultants.

Sincerely,

Original Signal 17

Harold R. Denton, Director Office of Nuclear Reactor Regulation

1. 1.



UNITED STATES NUCLEAR REGULATORY COMMISSION ADVISORY COMMITTEE ON REACTOR SAFEGUARDS WASHINGTON, D. C. 20555

November 9, 1982

Honorable Nunzio J. Palladino Chairman U.S. Nuclear Regulatory Commission Washington, D.C. 20555

Dear Dr. Palladino:

SUBJECT: ACRS REPORT ON THE NRC SYSTEMATIC EVALUATION PROGRAM REVIEW OF THE OYSTER CREEK NUCLEAR GENERATING STATION

During its 271st meeting, November 4-5, 1982, the ACRS reviewed the results of the Systematic Evaluation Program (SEP), Phase II, as it has been applied to the Oyster Creek Nuclear Generating Station. These matters were discussed also during a Subcommittee meeting in Washington, D.C. on October 26, 1982. During our review, we had the benefit of discussions with representatives of the General Public Utilities Nuclear Corporation, the Jersey Central Power & Light Company (Licensee), and the NRC Staff. We also had the benefit of the documents listed below.

This is our third review of the application of Phase II of the SEP. We reported to you on our reviews of the Palisades and R. E. Ginna plants in letters dated May 11, 1982 and August 18, 1982, respectively. The first report included comments also on the objectives of the SEP and the extent to which they have been achieved. Our review of the SEP in relation to the Oyster Creek plant has led to no changes in our previous findings regarding the program as reported in our letter on the Palisades plant.

The remainder of this letter relates specifically to the SEP review of the Oyster Creek plant.

Although the Oyster Creek plant is the first boiling water reactor (BWR) to be reviewed under the SEP, the findings by the NRC Staff regarding the number and nature of topics for which the plant did not meet current criteria were not markedly different from those for the Palisades and Ginna plants. A large number of these topics related to the adequacy of the design to resist extreme external phenomena (flooding, tornado, earthquake), and most of the remaining topics related to balance-of-plant items, or items of a generic nature not specific to BWRs.

Of the 137 topics to be addressed by the SEP, 30 were not applicable to the Oyster Creek plant, and 24 were deleted because they were being reviewed generically under either the Unresolved Safety Issues (USI) program or the TMI Action Plan. Of the 83 topics addressed in the Oyster Creek review, 38

82+1170447 XA

- 2 -Honorable Numzio J. Palladino

were found to meet current NRC criteria, and 5 were found to be acceptable on another defined basis. We have reviewed the assessments and conclusions of the NRC Staff relating to these topics and have found them appropriate.

For all or parts of the remaining 38 SEP topics, the Oyster Creek plant was found not to meet current criteria. These topics were addressed by the Integrated Plant Safety Assessment, and various resolutions have been proposed.

The Integrated Assessment has not yet been completed for all or parts of 13 topics, for which the Licensee has agreed to provide the results of studies, analyses, and evaluations needed by the NRC Staff for its assessments and decisions. All of these topics are of such a nature that hardware backfits may be required by the NRC Staff for their resolution. The Staff's assessments will be provided in a supplemental report that will be available for review in connection with the application for a fullterm operating license (FTOL) for the Oyster Creek plant.

For all or parts of 10 topics included in the Integrated Assessment, the NRC Staff concluded that no backfit is required. We concur.

For the remaining topics for which the assessment has been completed, the NRC Staff requires the addition or modification of structures or equipment in about half of the cases, and the development or modification of procedures or Technical Specifications in the other half. The Licensee does not agree with the NRC Staff's requirements for three of the hardware backfits, two of which relate to leakage detection systems, and for five of the required procedural backfits, all of which relate to the Technical Specifications. Our comments on these areas of disagreement are given below.

In connection with Topic III-4.A, Tornado Missiles, the NRC Staff's concern is that all of the components that could be used for shutdown heat removal could be disabled by multiple missiles transported by a single tornado. The NRC Staff requirement is that at least one system capable of shutdown heat removal should be protected against tornado missiles. The Licensee believes that the total loss of shutdown heat removal capability as a result of multiple missile strikes is of such low probability that no protection is needed. We agree that this is a very low probability event, but we do not believe that the probability has been quantified with any significant degree of certainty. Further, we recognize the importance of having at least one shutdown heat removal system available following a tornado, or other extreme environmental event. We recommend therefore that one such system be protected against tornado missiles (and other possible effects of high winds, such as sandstorms) unless the cost of such protection clearly outweighs the reduction in risk.

For Topic III-5.B, Pipe Break Outside Containment, the NRC Staff requires an automatic local leakage detection system for the isolation condenser piping,

Honorable Nunzio J. Palladino

which is lagged and is outside of containment. The system should be capable of detecting leaks from stable cracks before they grow to be too large. The detectable leak rate is based on an analysis of tight cracks whose length is two to four times the wall thickness. The Licensee contends that the leak rate corresponding to such a crack will be large enough that it can be detected by visual inspection. If they can show this to the NRC Staff's satisfaction, we feel such an approach is simple and reliable. If they cannot, an automatic leak detection system would be a more delicate but acceptable approach.

Topic V-5, Reactor Coolant Pressure Boundary Leakage Detection, relates to the requirement for a reliable system to detect leakage inside the containment with a sensitivity adequate to provide early warning so that timely actions can be taken to preclude a pipe break. The Licensee believes that the existing system, utilizing the containment sump, is satisfactory. We believe that this matter should be resolved in a manner satisfactory to the NRC Staff.

In connection with Topics V-5, VI-7.A.3 and VI-10.A, the NRC Staff requires that certain limiting conditions of operation, and surveillance or test requirements, be added to the Technical Specifications for the Oyster Creek plant. We concur.

Topics XV-16 and XV-18 relate to the calculated radiological consequences for certain design basis accidents; thyroid doses calculated in accordance with current criteria are considerably in excess of the siting criteria. To correct this situation, the NRC Staff requires that the iodine concentration in the reactor coolant be limited by appropriate changes to the Technical Specifications. We believe that this proposal is acceptable.

As was the case for the Palisades and Ginna plants, a plant-specific probabilistic risk assessment (PRA) was not available for the Oyster Creek plant. Because a plant-specific PRA was not available, the NRC Staff utilized in its Integrated Assessment the results of the Millstone Unit 1 PRA developed as part of the Interim Reliability Evaluation Program (IREP), suitably modified and interpreted to reflect the differences between the two plants. The PRA study for Oyster Creek addressed 20 of the topics included in the Integrated Assessment, a somewhat greater number than for either Palisades or Ginna. However, because the Millstone IREP did not include extreme external events, topics relating to design criteria for such events could not benefit from the use of PRA in the Integrated Assessment.

Our conclusions regarding the Oyster Creek SEP review are similar to those for the Palisades and Ginna plants:

 The SEP has been carried out in such a manner that the stated objectives have been achieved for the most part for the Oyster Creek plant and should be achieved for the remaining plants in Phase II of the Program. Honorable Nunzio J. Palladino

- 4 -

- 2. The actions taken thus far by the NRC Staff in its SEP assessment of the Oyster Creek plant are acceptable.
- 3. The ACRS will defer its review of the FTOL for the Oyster Creek Nuclear Generating Station until the NRC Staff has completed its actions on the remaining SEP topics and the USI and TMI Action Plan items.

Sincerely,

P. Shewmon Chairman

References:

- U. S. Nuclear Regulatory Commission Draft Report, "Integrated Plant Safety Assessment, Systematic Evaluation Program, Oyster Creek Nuclear Generating Station," NUREG-0822, September 1982.
- NRC Staff consultants' reviews of the Oyster Creek Integrated Plant Safety Assessment Report consisting of consultant reports from H. S. Isbin, Z. Zudans, J. M. Hendrie, and S. H. Bush, dated October 22, October 25, October 21, and October 20, 1982, respectively.
- U.S. Nuclear Regulatory Commission Safety Evaluation Reports, Oyster Creek Systematic Evaluation Program Topics, Volumes 1 through 3, dated October 1982.

HOM:			100	CONTROL	UATES	CONTROL NO.
ACRS: Shewnon			co	MPL DEADLINE	12/1/82	12467
			INT	ERIM REPLY	and the second	DATE OF DOCUMENT
0						PREPARE FOR SIGNATURE
Chairman Palladino			FIN	FINAL REPLY Spenton		OF
			FIL	E LOCATION	142/82	CHAIRMAN
EVALUATION PR CREEK NUCLEAR	GENERATING	YSTENATIC W OF THE STATION	OSYTER			
EVALUATION PR CREEK NUCLEAR	DATE	VSTENATIC W OF THE STATION		3		
EVALUATION PR CREEK NUCLEAR ASSIGNED TO Denton, NRR	DATE	VSTENATIC W OF THE STATION INFORMAT	COSYTER	anton		
ASSIGNED TO Denton, NRR f/approp actin Eisenhut	DATE 11/10/82 001-12 001-12 001-12 001-12	VSTENATIC W OF THE STATION Dircks Roe Reim Stello Davis	COSYTER COSYTER Case/De 1. PPE 2. Har 3. Mat 4. Vol	enton IS nauer ttson Ilmer		

No	1105	Loggir	ng Date 11/9/82
	NRC SEC	RETARIAT	
то: Г	Commissioner		Date
, E	Exec. Dir /Oper.		Gen. Counsel
7	Cong Liaison	ā	Solicitor
Ē	Public Affairs	ō	Secretary
Ē	1	Ō	Inspector & Auditor
-	J		Policy Evaluation
Incomine	Paul Shewmon	n, CHairman	
From	ACRS		
	Palladino		11/0/00
To	ACDS woment on	the NDC Date .	11/9/82
Subject	ALKS report on	OVETER Crock	ematic evaluati
proç	ram review of the	UTSTER Creek	nuc gen sta
Prepare rep	bly for signature of:		
Chair	man		
Comr	nissioner		
	GC, CL, SOL, PA, SECY,	A, PE	
Signa	ture block omitted		
П			
Retur	m original of incoming with	response	
For direct	reply *		
E or appror	viste action		
_ For inform	ation		
	RF		
Remarks:			
	For the Commission:	BILLIE	
	and the lot of the lot	UTO SACU COMARDODA	ance and Hecords Bran
	Send three (3) copies of repl	y to becy contrapont	fence and necords bran