CONNECTICUT YANKEE ATOMIC POWER COMPANY

HADDAM NECK PLANT
362 INJUN HOLLOW ROAD • EAST HAMPTON, CT 06424-3099

April 18, 1997

Docket No. 50-213
CY-97-031
Re: 10CFR50.90
IIS,SEP,
USI A-46
IPEEE

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Haddam Neck Plant
Final Status and Cancellation of Remaining SEP, IIS, USI A-46 and IPEEE Items

The purpose of this letter is to inform the NRC Staff of the final status and cancellation of the remaining Systematic Evaluation Process (SEP) Issues which are controlled under the Integrated Implementation Schedule (IIS), Unresolved Safety Issue (USI) A-46 Outlier Resolutions, Individual Plant Examination for External Events (IPEEE) Outlier Resolutions and associated commitments for the Haddam Neck Plant (HNP). This letter is a follow up to the letter dated December 23, 1996,[1] which requested a hold be placed on removal of License Condition 2.C.6 "Integrated Implementation Schedule Program Plan". Based on the limited number of systems required to support storage of the spent fuel, the time available to restore cooling, if it is lost, and the additional bases provided below, the remaining commitments that were part of the IIS are no longer required. Therefore, CYAPCO respectfully requests that the NRC Staff proceed with processing the proposed license amendment to remove License Condition 2.C.6.

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AE01 (7)
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USI A-46 Final Status

Generic Letter 87-02, Supplement 1 was issued to implement the USI A-46 resolution which concluded that the seismic adequacy of certain equipment in older nuclear power plants should be reviewed against seismic criteria not in use when these plants were

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(1) F. C. Rothen to USNRC, "Withdrawal of Proposed License Amendments" dated December 23, 1996.

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licensed. The Generic Implementation Procedure (GIP), Revision 2 was used to resolve USI A-46. The GIP-2 provides an initial screening process, detailed technical approach, generic procedures and documentation guidance to verify the seismic adequacy of mechanical and electrical safe shutdown equipment. As part of the GIP requirement, licensees are to identify equipment necessary to bring the plant to, and maintain it in, a hot shutdown condition during the first 72 hours following a Safe Shutdown Earthquake. If safe shutdown equipment should fail to pass this initial screening, an 'outlier' is classified and a more detailed method for verifying its seismic adequacy may be used. The USI A-46 final walkdowns were completed during the Cycle 17 refueling outage and in a letter dated January 14, 1994,[2] a summary report including Safe Shutdown Equipment List (SSEL) & Outliers was sent to the NRC Staff.

IPEEE Final Status

Generic Letter (GL) 88-20, Supplement 4 requested all licensees to perform an IPEEE to find plant-specific severe accident vulnerabilities initiated by external events and to submit the results together with any determined improvements and corrective actions to the NRC. The selected use of Seismic Probabilistic Risk Assessment (SPRA) methodology for the IPEEE is in conformance with the guidance provided by GL 88-20, Supplement 4 and the detailed guidance provided in NUREG-1407. In a letter dated December 27, 1994, [3] a summary report including a recommendation for implementation of design and procedural changes for severe accident risk outliers was submitted to the NRC.

Since the IPEEE plant walkdown requirements are consistent with the requirements in the USI A-46 review document, the SSEL created by A-46 has been integrated into IPEEE component selection. Therefore, many of the A-46 outliers also appear as IPEEE outliers. Attachments 1 & 2 provide the status of the current USI A-46/IPEEE outlier resolutions since the last request for updated information was sent to the NRC. The

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[2] J. F. Opeka to USNRC, "Unresolved Safety Issue A-46 Walkdown Summary Report and Proposed Expansion of Licensing Basis for Verification of Equipment Seismic Adequacy", dated January 13, 1994.

[3] J. F. Opeka to USNRC, "Response to Generic Letter 88-20, Supplement 4, IPEEE Summary Report", dated December 27, 1994.

canceled outliers identified in the USI-A46 (3 total) and IPEEE status (9 total) will no longer be performed based on the following:

1. The permanent defueled condition of the plant falls outside the scope of USI-A46 and IPEEE program commitments.

2. None of the canceled outliers are deficiencies against the existing plant licensing or design basis. Therefore, there is no reportability and operability implications pursuant to the Technical Specifications and the FSAR.

3. The HNP has determined that the remaining outliers would have negligible or no public risk significance and thus, is closing the remaining outliers without implementation.

IIS Final Status

The IIS contained eleven commitments that were scheduled to be completed by the end of the cycle 20 refueling outage. Attachment 3 provides a list of the remaining commitments that are no longer required to support storage of the fuel in the spent fuel pool. Note that the air cooled diesel generator was installed in 1996. It was originally designed to reduce the impact on core melt frequency for station blackout as well as for certain fire and tornado scenarios. CYAPCO plans to continue using the air-cooled diesel to provide an alternate power source for the spent fuel building.

In summary, CYAPCO requests that the NRC Staff close the USI A-46, IPEEE and IIS topics for the HNP. We also request that the NRC Staff proceed with processing the proposed license amendment to remove License Condition 2.C.6.

If you have any questions, please contact Mr. G. P. van Noordennen at (860) 267-3938.

Very Truly Yours,
CONNECTICUT YANKEE ATOMIC POWER COMPANY

R. A. Mellor
Director of Site Operations and Decommissioning

cc: H. J. Miller, Region I Administrator
M. B. Fairtile, NRC Project Manager, Haddam Neck Plant
W. J. Raymond, Senior Resident Inspector, Haddam Neck Plant

Subscribed and sworn to before me

this 18 day of April, 1997

Date Commission Expires: 11/30/98

Docket No. 50-213
CY-97-031

ATTACHMENT 1

Haddam Neck Plant

Outstanding USI -A46 Outlier Resolution Status

April 1997

Attachment - 1
OUTSTANDING USI-A46 OUTLIER RESOLUTIONS STATUS

	RISK OUTLIER	PROPOSED FIX	STATUS
	SEISMIC		
2.	SPEC 200 RPS rack sections B1A, B1B, B2A are part of the SSEL. There are unrestrained file cabinets near the south end of this Spec 200 cabinet.	i. Tie down or relocate file cabinets south of the SPEC 200 cabinet.	Resolved. Anchoring of file cabinet completed via WO # CY95-14360 for MSEE No. 95-004.
		ii. For the long-term, ensure that the house keeping procedure prevents recurrence of this type of spatial interaction.	Resolved. Procedures have been addressed per Ref. 1.
3.	C channel frame restrains movement of valve BA-MOV-349 through a bolt on top of the valve actuator. Based on discussions with a piping engineer, the frame serves no function for the pipe.	Remove/modify the frame to eliminate interference.	Resolved. Cutting of existing notches was completed via WO #CY9511515 for NCR 95-307 disposition
4.	C channel frame restrains movement of valve BA-MOV-386 through a bolt on top of the valve actuator. Based on discussions with a piping engineer, the frame serves no function for the pipe. Also need to resolve field installation problems with grout under the stanchion.	i. Remove/modify the frame to eliminate interference.	Resolved. The same WO as Item #3.
		ii. Repair grout	Resolved. Grouting was repaired through WO #CY-95-08403 per NCR 95-296 disposition.
5.	Spacing between battery BT-1A cells does not have tight fit.	Install crushable foam between the railing and battery cells or add spacers/shims between the vertical post and side rail to provide snug fit.	Cancelled per Reference 6
7.	Duct work over Buses 1-4, 5, 6, 7 is supported with unknown type of anchors	Investigate the overhead duct supports to determine the type and capacity of the concrete anchors used.	Cancelled per Reference 6
8.	Existing cabinets 8DB1A and 9DB1A of Diesel Aux. Control panel (EG-2A) are not bolted to adjacent cabinet 9DB1.	Tie together or provide cushioning between cabinets to preclude any impact.	Resolved. No modifications required per justification provided in Ref. 2.
9.	Existing cabinets 8DB1A and 9DB1A of Diesel Aux. Control panel (EG-2B) are not bolted to adjacent cabinet 9DB1.	Tie together or provide cushioning between cabinets to preclude any impact.	Resolved. No modifications required per justification provided in Ref. 2.
13.	Three anchors on EDG fuel oil level transmitter LT-1700A are missing.	Replace and tighten anchors.	Resolved. (4) 1/4" hilti bolts installed via WO #CY95-14543 for NCR 95-290 disposition. I&C work was implemented under WO CY96-00379 in 2/26/96.

Attachment - 1
OUTSTANDING USI-A46 OUTLIER RESOLUTIONS STATUS

	RISK OUTLIER	PROPOSED FIX	STATUS
			No DCN & PDCR required per Ref. 3.
14.	Anchorage on EDG fuel oil level transmitter LT-1700B is loose.	Tighten anchors.	Resolved. (4) 1/4" hilti bolts installed via WO #CY95-14543 for NCR 95-290 disposition. No DCN & PDCR required per Ref. 3.
19.	Various outlier relays consisting of : bad actor relays, relays with no GERS, and relays of unknown make.	a. Perform evaluations to determine if compensating operator actions can be credited for some or all of the relays and if the actions need to be included in the seismic AOPs. b. Resolve seismic issues or replace remaining relays.	Cancelled per Reference 6
	Additional Outlier		
	There was an oversight in the original submittal which resulted in three tanks (DWST, PWST, and RWST) being omitted from the Outlier Seismic Verification Sheet (OSVS). The documentation was modified to reflect the changes and sent to the NRC per Ref. 4.	Demonstrate the low contribution of the tanks to public risk by determining whether the public safety benefits from upgrading the tanks is negeglible.	Resolved. Per Ref. 5, PRA does not recommend upgrading these tanks due to large cost and neglible seismic CDF safety benefits.

References:

1. M. P. Derrig to J. K. Rothert, Memo CY-TS-94-0656, "IPEEE Outliers", dated October 19, 1994.

2. A. Vaysbord to J. F. Bibby, Memo DECY-95-0574, "Responses to A/R No. 950626453 for USI-A46 Outliers Items 8 & 9 and A/R No. 95002274 for IPEEE Risk Outlier Items 7 & 8", dated September 22, 1996.

3. S. Pornprasert to J. F. Bibby, Memo DECY-95-0480, " Response to A/R No. 95024388 for USI-A46 Outlier No. 13 & 14", dated August 9, 1995.

4. J. F. Opeka to USNRC, Docket No. 50-213 B14881,dated June 22, 1994.

5. S. Pornprasert to E. P. Perkins, Memo DECY-96-0494, "Response to A/R No. 96003989 for USI-A46 Outlier Resolutions of RWST and DWST", dated August 23, 1996.

6. T. C. Feigenbaum letter to the NRC "Certification of Permanent Cessation of Power Operation And That Fuel Has Been Permanently Removed From The Reactor" dated December 5, 1996.

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CY-97-031

Attachment 2

Haddam Neck Plant

IPEEE Risk Outlier Resolution Status

April 1997

Attachment - 2
IPEEE RISK OUTLIER RESOLUTIONS STATUS

	RISK OUTLIER		PROPOSED FIX	STATUS
	SEISMIC			
2.	SPEC 200 RPS rack sections B1A, B1B, B2A are part of the SSEL. There are unrestrained file cabinets near the south end of this Spec 200 cabinet.	i.	Tie down or relocate file cabinets south of the SPEC 200 cabinet.	Resolved. Anchoring of file cabinet completed via WO # CY95-14360 for MSEE No. 95-004.
		ii.	For the long-term, ensure that the house keeping procedure prevents recurrence of this type of spatial interaction.	Resolved. Procedures have been addressed per Ref. 1.
3.	C channel frame restrains movement of valve BA-MOV-349 through a bolt on top of the valve actuator. Based on discussions with a piping engineer, the frame serves no function for the pipe.		Remove/modify the frame to eliminate interference.	Resolved. Cutting of existing notches was completed via WO #CY9511515 for NCR 95-307 disposition
4.	C channel frame restrains movement of valve BA-MOV-386 through a bolt on top of the valve actuator. Based on discussions with a piping engineer, the frame serves no function for the pipe. Also need to resolve field installation problems with grout under the stanchion.	i.	Remove/modify the frame to eliminate interference.	Resolved. The same WO as Item #3.
		ii.	Repair grout	Resolved. Grouting was repaired via WO #CY-95-08403 for NCR 95-296 disposition.
5.	Spacing between battery BT-1A cells does not have tight fit.		Install crushable foam between the railing and battery cells or add spacers/shims between the vertical post and side rail to provide snug fit.	Cancelled per Reference 13
7.	Existing cabinets 8DB1A and 9DB1A of Diesel Aux. Control panel (EG-2A) are not bolted to adjacent cabinet 9DB1.		Tie together or provide cushioning between cabinets to preclude any impact.	Resolved. No modifications required per justification provided in Ref. 2.
8.	Existing cabinets 8DB1A and 9DB1A of Diesel Aux. Control panel (EG-2B) are not bolted to adjacent cabinet 9DB1.		Tie together or provide cushioning between cabinets to preclude any impact.	Resolved. No modifications required per justification provided in Ref. 2.
12.	Three anchors on EDG fuel oil level transmitter LT-1700A are missing.		Replace and tighten anchors.	Resolved. (4) 1/4" Hilti bolts installed via WO #CY95-14543 for NCR 95-290 disposition. I&C work was implemented under WO CY96-00379 in 2/26/96. No DCN & PDCR required per Ref. 3.
13.	Anchorage on EDG fuel oil level transmitter LT-1700B is loose.		Tighten anchors.	Resolved. (4) 1/4" Hilti bolts installed via WO #CY95-14543 for NCR 95-290 disposition. No DCN & PDCR required per Ref. 3.
18.	Throughout the plant the floor grating is not always secured.		Replace missing anchors and modify appropriate housekeeping procedure to ensure that they stay anchored through periodic inspections.	Resolved. Work completed per Ref. 4.

Attachment - 2
IPEEE RISK OUTLIER RESOLUTIONS STATUS

19.	Hydrogen skid tank in yard is not anchored.	Bolt it down.	Resolved. (4) 3/4" Hilti HVA Adhesive Anchoring system installed via WO #96-00771 for MSEE No. 95-030.
22.	Boric acid pumps' anchorage is inadequate. The median capacity is calculated at 0.01g.	Strengthen the anchorage by welding stiffeners.	Cancelled per Reference 13
23.	FW heaters have very low seismic capacity. 0.03g.	Perform additional analysis and upgrade FW heater anchorage as required.	Resolved. FW heater anchorage modified per PDCR No. 1563.
24.	CAR Fan has very low seismic capacity.	Perform additional investigations/modifications to improve CAR Fan capacity or perform evaluations to determine whether the Containment Spray system is adequate to support the feed and bleed function.	Resolved. No modifications required per justifications provided in Ref. 5.
26.	Service water piping has low seismic capacity.	Perform additional evaluations to improve seismic capacity or add additional supports.	Cancelled per Reference 13
27.	There are bad actor relays in the HPSI and LPSI pump circuits.	Perform evaluations to determine compensating operator actions to be included in the seismic AOP	Cancelled per Reference 13
28.	There are bad actor relays in the emergency diesel circuitry.	Perform evaluations to determine compensating operator actions to be included in the seismic AOP.	Resolved. Engineering valuation in Ref. 6 indicated (4) Filed Flash Cut-out (FFCO) and (4) 59A, B/1-8 & 59A,B/1-9 (W-SV) relays contact chatter during SSE do not cause unacceptable consequences. Thus, no action is considered warranted for FFCO relays in the diesel excitation control panels and W-SV relays in the CB/8DB1 & CB/9DB1 panels.
29.	SW-MOV- 3 and -4 have relays whose capacities are unknown.	Perform evaluations to determine compensating operator actions to be included in the seismic AOP.	Resolved. These (5) Auxiliary relays (GOULD/ITE J20A40) the type found inside Bus 11 are associated with the USI- A46 SSEL. The A-46 SSEL is a subset of IPEEE. Per Dwg. 16103-30091, the devices are in energized state with normally open (NO). These relays were tested as part of the entire SWGR assembly (Test Report ABB 48-66281-SSA). TRS envelop SWGR 'B' El. 41'-6" RRS.
30.	AFW socket welded fittings have low seismic	Strengthen by adding additional supports to susceptible fittings in the	Cancelled per

Attachment - 2
IPEEE RISK OUTLIER RESOLUTIONS STATUS

	capacity. (identified 09/02/94)	area of the FW Reg. valves	Reference 13
	EXTERNAL FLOODING		
31.	Service water strainer cleaning capabilities for extreme flooding conditions (SWOPI).	IPEEE to determine risk and provide recommendation.	Resolved. AOP 3.2-24 was revised to install duplex SW strainers for the DG's in the event of a flood per Ref. 7.
	SNOW & ICE		
33.	Service/Control building, Service/Aux. Bay, Service/Service Bay, and PAB have limited roof capacity.	Generate Snow/Ice removal procedure.	Resolved. Develop. of new procedure not required. Justifications provided in Ref. 8.
	FIRE		
34.	Relatively high probability of diesel B unavailability.	Develop procedure for connecting Air Cooled DG.	Cancelled per Reference 13
35.	Potential coincidental loss of DC bus A and BX due to their spatial proximity.	Develop procedure to deal with the loss of DC buses A and BX.	Cancelled per Reference 13
36.	Cable vault and cable spreading area - large consequences of a fire in an area where there is a high concentration of cables of both trains A & B.	Change training philosophy to increase sensitivity and awareness of transient combustibles and maintenance activities in the cable spreading area and cable vault to same level as for control room and switchgear rooms.	Cancelled per Reference 13
37.	Cable spreading area cable separation concerns.	Installation of additional sprinkler heads on trays where numerous cable sprays are stacked above each other.	Resolved. No modifications required per justifications provided in Ref. 9.
38.	Trains A & B control cable separation in the control room and cable spreading area.	Improve AOP 3.2.57 for recovery from control room, switchgear room A, and cable spreading area fires. Also, for the cable spreading area revise procedures for 'A' charging pump so that it can be credited for fire scenario in cable spreading area.	Resolved. The existing procedures and process are adequate per justifications in Ref. 10. In addition, PRA has performed further investigation and concludes that the past and current practices and procedures associated with this issue are acceptable, Ref. 11.
39.	Trains A & B cable separation in the PAB corridor (trays C1 and C7) for charging pump supports.	Re-route either charging pump B main or auxiliary lube oil pump cables.	Cancelled per Reference 13
	FIRE/SEISMIC INTERACTIONS		
40.	Vertical unanchored waste oil tank in the waste oil area can topple over flammable liquid containers in that area.	Installation of additional anchorage to prevent toppling.	Resolved. No modifications required per justifications provided in Ref. 12. Kerosene containers removed from the oil storage room. Filled lube oil containers replaced with empty containers above the first shelf rack by the waste oil tank. Caution signs posted for installation of new racks and placing of empty containers above first shelf only.

Attachment - 2
IPEEE RISK OUTLIER RESOLUTIONS STATUS

41.	End bottle of Carbon Dioxide fire suppression system for containment cable vault requires restraint modification (IN 94-12).	Modify end bottle restraint to adequately restrain bottle.	Resolved. Welding of end restraint completed via generic maintenance AWO # CY-95-05650.
42.	Batteries to the diesel fire pump require restraining (IN 94-12).	Installation of anchorage to prevent battery movement	Resolved. Hilti anchors, spacers and straps installed (BT-3A/3B) via WO # CY95-16001 for MSEE No. 95-002.
	Peer Review Comment		
	Air Handling Unit (AC-23-1A) had not been available for internal inspection of the fan/motor skid on spring isolators when the PRA walkdown was performed.	Perform internal walk down inspection of the fan/motor spring isolators when the unit is out of service.	Resolved. As part of a response to the NRC RAI, Ref. 17, CY has committed (No. B15571-2) to implement the mods by RFO 19. The support upgraded to limit movement in the longitudinal direction (parallel to axis of the fan/motor system). The upgrade consisted of a 1/4" neoprene pads attached to existing base frame and an angle steel with Hilti bolts anchored to the 6" thick reinforced concrete pad. Mods completed under AWO CY96-01254 for MSEE No. 96-005.

References:

1. M. P. Derrig to J. K. Rothert, Memo CY-TS-94-0656, "IPEEE Outliers", dated October 19, 1994.
2. A. Vaysbord to J. F. Bibby, Memo DECY-95-0574, "Responses to A/R No. 95026453 for USI-A46 Outliers Items 8 & 9 and A/R No. 95002274 for IPEEE Risk Outlier Items 7 & 8", dated September 22, 1995.
3. S. Pornprasert to J. F. Bibby, Memo DECY-95-0480, " Response to A/R No. 95024388 for USI-A46 Outlier No. 13 & 14", dated August 9, 1995.
4. S. Pornprasert to J. F. Bibby, Memo DECY-95-0432, " Responses to A/R No. 95002274 for IPEEE Risk Outlier No. 18", dated July 17, 1995.
5. S. Pornprasert to J. F. Bibby, Memo DECY-95-0476, 'Responses to A/R No. 95002274 for IPEEE Risk Outlier No. 24,' dated August 7, 1995.
6. Engineering Evaluation CY-EV-960001, "MKW Power Systems Part 21 Report No. 10CFR21-0069", Rev. 0.
7. J. K. Rothert to R. W. Kasuga, Memo NE-95-SAB-163, "Closure of SWOPI Inspection Request #101A SW Strainer Avialability/External Flooding", dated April 18, 1995.

8. J. Rothert to S. Pornprasert, Memo NE-96-SAB-011. "CY IPEEE Risk Outlier #33: Snow & Ice", dated January 15, 1996.

9. J. K. Rothert/S. D. Weerakkody to S. Pornprasert, Memo NE-96-SAB-045, "CY IPEEE Risk Outlier #37, Cable Spreading Area Cable Separation Concerns", dated February 22, 1996 Justification Memo for Item #37 from J. Rothert.

10. J. Pointkowski to J. H. Rothert, memo ODM 96-020, "CY IPEEE Meeting - CY Position Outlier # 38," dated February 26, 1996memo for Item #38.

11. J. K. Rothert to S. Pornprasert, Memo No. NE-96-SAB-234, "PRA Closure of CY IPEEE Risk Outlier #38," dated September 17, 1996.

12. J. K. Rothert to S. Pornprasert, Memo NE-95-SAB-427, "IPEEE Fire/Seismic Risk Outlier #40," dated October 19, 1995.

13. T. C. Feigenbaum letter to the NRC "Certification of Permanent Cessation of Power Operation And That Fuel Has Been Permanently Removed From The Reactor" dated December 5, 1996.

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Attachment 3

Haddam Neck Plant

IIS Commitment Matrix

April, 1997

Haddam Neck Plant
Proposed Revision to Operating License DPR-61
Deletion of
License Condition 2.C.6 - Integrated Implementation Schedule
Commitments Matrix

ISAP Topic No.	Scope of Commitment	Completion Date
1.19	Replace existing containment isolation valve, VS-SOV-12-1, to provide local, mechanical position indication.	Cancelled
1.48	A. Complete Outlier #5 - spacing between station batteries cells and railing as not having close-fitting.	Cancelled See Item 5 on Attachments 1 and 2
	B. Complete Outlier #7 - interaction between ductwork and various busses is a concern since the type and capacity of anchors is unknown.	Cancelled See Item 7 on Attachment 1
	C. Complete Outlier #19 - concerns relays with no Generic Equipment Ruggedness Spectrum (GERS) and relays consisting of "bad actors."	Cancelled See Item 19 on Attachment 1
1.64	Replace RH-V-808A with a motor-operated gate valve.	Cancelled
1.121	Complete Phase I of Post Accident Sampling System Enhancement modifications to improve the ability to separate dissolved gas samples from the reactor coolant system and quantitatively analyze the samples for hydrogen noble gases.	Cancelled
1.04	A. Complete modifications to the feedwater system to raise system seismic fragilities. B. Complete modifications to the auxiliary feedwater system to raise system seismic fragility. C. Complete modifications to the service water system to raise system seismic fragility.	Cancelled Cancelled Cancelled
2.145	Install an air-cooled diesel generator for station blackout as well as for certain fire and tornado scenarios to reduce impact on core melt frequency.	Cancelled
2.146	Replace all main control board equipment as part of rod position indication system upgrade.	Cancelled