



SACRAMENTO MUNICIPAL UTILITY DISTRICT ☐ 6201 S Street, Box 15830, Sacramento, California 95813; (916) 452-3211

December 9, 1980

Director of Nuclear Reactor Regulation
Attention: Mr. Darrell G. Eisenhut
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Docket 50-312
Rancho Seco Nuclear Generating
Station, Unit No. 1

DEC 17 AM 8 56
DISTRIBUTION SERVICES
BRANCH
U.S. NRC
DIVISION OF LICENSING
WASHINGTON, DC 20555

Dear Mr. Eisenhut:

The purpose of this letter is to provide you with updated information in response to your request for information of February 25, 1980, relative to turbine disc integrity. Our original response dated March 19, 1980 contained the results of site-specific calculations, to respond to question 1-d of your letter. These calculations have now been repeated employing a more sophisticated calculational model, which now accounts for thermal and steam bending stresses, and a revised correlation for calculating the crack growth rate. The results of these calculations are presented in the attachments which constitute a revision to Enclosure 1 (proprietary) and Enclosure 1 (non-proprietary) of our previous submittal.

The attached site specific responses (Enclosure 1) contain proprietary information of the Westinghouse Electric Corporation. A copy of the previously submitted Application for Withholding AW-80-5 dated March 14, 1980 and the associated affidavit is attached and is equally applicable to this new material. Accordingly, it is requested that the subject Westinghouse proprietary information be withheld from public disclosure in accordance with the provisions of 10CFR2.790 of the Commission's regulations.

Correspondence with respect to the affidavit or application for withholding should reference AW-80-5 and should be addressed to Mr. R. W. Gaul, Manager, CR Disc Program, Westinghouse Electric Corporation, Steam Turbine Division, Lester Branch Box 9175, Philadelphia, PA 19113.

Sincerely yours,

J. J. Mattimoe

J. J. Mattimoe
Assistant General Manager
and Chief Engineer

PA01
S
1/1
change: L E
PDR 1 NP
LPDR 1 NP
NSIC 1 NP

Attachments **8012170 458**
Sworn to and subscribed before
me this 12th day of December, 1980.



Patricia K. Geisler

ENCLOSURE I

For Disclosure

Not Considered Proprietary

[] INDICATES WESTINGHOUSE PROPRIETARY
LEVELS B,C,E

DATE OF REPORT : 092280

ID # : D281100404

LP TURBINE DISC INFORMATION

A. UNIT IDENTIFICATION

1. BUILDING BLOCK 281
2. UNIT RANCHO SECO #1
3. CUSTOMER: SHUD.
4. LPM 2
5. LOCATION GEN
6. DISC# 4
7. TEST NO. TN6624

B. MATERIAL PROPERTIES (HUB)

1. TYPE (MIN. Y.S. [] TO [](KSI))
2. SUPPLIER: MIDVALE HEPPENSTALL
3. Y.S. (KSI) []
4. U.T.S. (KSI) []
5. ELONGATION []
6. R.A. []
7. FATT (DEG.F) []
8. R.T. IMPACT (FT.LB.) []
9. U.S. IMPACT TEMP. (DEG.F) []
10. U.S. IMPACT ENG. (FT.LB.) []
11. U.S. KIC (KSI*SQRT(IN.)) []

C. MATERIAL PROPERTIES (RIM)

1. Y.S. (KSI) []
2. U.T.S. (KSI) []
3. ELONGATION []
4. R.A. []
5. FATT (DEG.F) []
6. R.T. IMPACT (FT.LB.) []
7. U.S. IMPACT TEMP. (DEG.F) []
8. U.S. IMPACT ENG. (FT.LB.) []
9. U.S. KIC (KSI*SQRT(IN.)) []

D. CHEMISTRY

C [] MN [] SI [] P [] CR [] MO [] V []
NI [] AS [] SB [] SN [] AL [] CU [] S []

E. BORE STRESS

SPEED (RPM) STRESS

1. 1800 (KSI) []
2. 2160 (120%) (KSI) []

F. CRACK DATA (KEYWAY RADIUS (IN) [])

1. A-CR-OP (1800 RPM) (IN.) []
2. A-CR-OS (OVERSPEED) (IN.) []

G. SERVICE DATA

1. OPER. TEMP. METAL TEMP. HUB (DEG.F) []
2. ESTIMATED MAX DA/DT (IN/HR) []
3. ESTIMATED MAX DA/DT (IN/MONTH) []

H. INSPECTION STATUS

1. OPERATING TIME AT INSPECTION (HR.) []
2. KEYWAY CRACK DEPTH (MAX.)-(IN.) []
3. BORE CRACK DEPTH (MAX.)-(IN.) []
4. DISK STATUS []

[] INDICATES WESTINGHOUSE PROPRIETARY
LEVELS B,C,E

DATE OF REPORT : 092280

ID # : D281100404

LP TURBINE DISC INFORMATION

A. UNIT IDENTIFICATION

1. BUILDING BLOCK 281
2. UNIT RANCHO SECO #1
3. CUSTOMER: SHUD.
4. LP# 2
5. LOCATION GEN
6. DISC# 5
7. TEST NO. TN6623

B. MATERIAL PROPERTIES (HUB)

1. TYPE (MIN. Y.S. [] (KSI)) TD
2. SUPPLIER: MIDVALE HEPPENSTALL
3. Y.S. (KSI) []
4. U.T.S. (KSI) []
5. ELONGATION []
6. R.A. []
7. FATT (DEG.F) []
8. R.T. IMPACT (FT.LB.) []
9. U.S. IMPACT TEMP. (DEG.F) []
10. U.S. IMPACT ENG. (FT.LB.) []
11. U.S. KIC (KSI*SQRT(IN.)) []

C. MATERIAL PROPERTIES (RIM)

1. Y.S. (KSI) []
2. U.T.S. (KSI) []
3. ELONGATION []
4. R.A. []
5. FATT (DEG.F) []
6. R.T. IMPACT (FT.LB.) []
7. U.S. IMPACT TEMP. (DEG.F) []
8. U.S. IMPACT ENG. (FT.LB.) []
9. U.S. KIC (KSI*SQRT(IN.)) []

D. CHEMISTRY

C [] MN [] SI [] P [] CR [] MO [] V []
NI [] AS [] SB [] SN [] AL [] CU [] S []

E. BORE STRESS

SPEED (RPM) STRESS

1. 1800 (KSI) []
2. 2160 (120%) (KSI) []

F. CRACK DATA (KEYWAY RADIIUS (IN) [])

1. A-CR-OP (1800 RPM) (IN.) []
2. A-CR-OS (OVERSPEED) (IN.) []

G. SERVICE DATA

1. OPER. TEMP. METAL TEMP. HUB (DEG.F) []
2. ESTIMATED MAX DA/DT (IN/HR) []
3. ESTIMATED MAX DA/DT (IN/MONTH) []

H. INSPECTION STATUS

1. OPERATING TIME AT INSPECTION (HR.) []
2. KEYWAY CRACK DEPTH (MAX.)-(IN.) []
3. BORE CRACK DEPTH (MAX.)-(IN.) []
4. DISK STATUS []

[] INDICATES WESTINGHOUSE PROPRIETARY
LEVELS B,C,E

DATE OF REPORT : 092280

ID # : D281100404

LP TURBINE DISC INFORMATION

A. UNIT IDENTIFICATION

1. BUILDING BLOCK 281
2. UNIT RANCHO SECO #1
3. CUSTOMER: SMUD.
4. LPM 2
5. LOCATION GEN
6. DISC 3
7. TEST NO. TN6649

B. MATERIAL PROPERTIES (HUB)

1. TYPE (MIN. Y.S. [] (KSI))
2. SUPPLIER: BETHLEHEM STEEL
3. Y.S. (KSI) []
4. U.T.S. (KSI) []
5. ELONGATION []
6. R.A. []
7. FATT (DEG.F) []
8. R.T. IMPACT (FT.LB.) []
9. U.S. IMPACT TEMP. (DEG.F) []
10. U.S. IMPACT ENG. (FT.LB.) []
11. U.S. KIC (KSI*SQRT(IN.)) []

C. MATERIAL PROPERTIES (RIM)

1. Y.S. (KSI) []
2. U.T.S. (KSI) []
3. ELONGATION []
4. R.A. []
5. FATT (DEG.F) []
6. R.T. IMPACT (FT.LB.) []
7. U.S. IMPACT TEMP. (DEG.F) []
8. U.S. IMPACT ENG. (FT.LB.) []
9. U.S. KIC (KSI*SQRT(IN.)) []

D. CHEMISTRY

C MN SI P CR MO V
NI AS SB SN AL CU S

E. BORE STRESS
SPEED (RPM) STRESS

1. 1800 (KSI) []
2. 2160 (120%) (KSI) []

F. CRACK DATA (KEYWAY RADIUS (IN) [])

1. A-CR-OP (1800 RPM) (IN.) []
2. A-CR-OS (OVERSPEED) (IN.) []

G. SERVICE DATA

1. OPER. TEMP. METAL TEMP. HUB (DEG.F) []
2. ESTIMATED MAX DA/DT (IN/HR) []
3. ESTIMATED MAX DA/DT (IN/MONTH) []

H. INSPECTION STATUS

1. OPERATING TIME AT INSPECTION (HR.) []
2. KEYWAY CRACK DEPTH (MAX.)-(IN.) []
3. BORE CRACK DEPTH (MAX.)-(IN.) []
4. DISK STATUS []

C] INDICATES WESTINGHOUSE PROPRIETARY
LEVELS B,C,E

DATE OF REPORT : 092280

ID # : D281100404

LP TURBINE DISC INFORMATION

A. UNIT IDENTIFICATION

1. BUILDING BLOCK 281
2. UNIT
3. CUSTOMER: RANCHD SECO #1
4. LPM SHUD.
5. LOCATION 2 GEN
6. DISC# 2
7. TEST NO. TN6660

B. MATERIAL PROPERTIES (HUB)

1. TYPE (MIN. Y.S. [] (KSI))
2. SUPPLIER: UNITED STATES STEEL
3. Y.S. (KSI)
4. U.T.S. (KSI)
5. ELONGATION
6. R.A.
7. FATT (DEG.F)
8. R.T. IMPACT (FT.LB.)
9. U.S. IMPACT TEMP. (DEG.F)
10. U.S. IMPACT ENG. (FT.LB.)
11. U.S. KIC (KSI*SQRT(IN.))

C. MATERIAL PROPERTIES (RIM)

1. Y.S. (KSI)
2. U.T.S. (KSI)
3. ELONGATION
4. R.A.
5. FATT (DEG.F)
6. R.T. IMPACT (FT.LB.)
7. U.S. IMPACT TEMP. (DEG.F)
8. U.S. IMPACT ENG. (FT.LB.)
9. U.S. KIC (KSI*SQRT(IN.))

D. CHEMISTRY

C] MN] SI] P] CR] MO] V]
NI] AS] SB] SN] AL] CU] S]

E. BORE STRESS

SPEED (RPM) STRESS

1. 1800 (KSI) []
2. 2160 (120%) (KSI) []

F. CRACK DATA (KEYWAY R/DIUS (IN) [])

1. A-CR-OP (1800 RPM) (IN.) []
2. A-CR-OS (OVERSPEED) (IN.) []

G. SERVICE DATA

1. OPER. TEMP. METAL TEMP. HUB (DEG.F) []
2. ESTIMATED MAX DA/DT (IN/HR) []
3. ESTIMATED MAX DA/DT (IN/MONTH) []

H. INSPECTION STATUS

1. OPERATING TIME AT INSPECTION (HR.) []
2. KEYWAY CRACK DEPTH (MAX.)-(IN.) []
3. BORE CRACK DEPTH (MAX.)-(IN.) []
4. DISK STATUS []

[] INDICATES WESTINGHOUSE PROPRIETARY
LEVELS B,C,E

DATE OF REPORT : 092280

ID # : D281100404

LP TURBINE DISC INFORMATION

A. UNIT IDENTIFICATION

1. BUILDING BLOCK 281
2. UNIT
3. CUSTOMER: RANCHO SECO #1
4. LP# SHUD.
5. LOCATION 2 GEN
6. DISC# 1
7. TEST NO. TN6749

B. MATERIAL PROPERTIES (HUB)

1. TYPE (MIN. Y.S. [] (KSI)) TD
2. SUPPLIER: MIDVALE HEPPENSTALL
3. Y.S. (KSI) []
4. U.T.S. (KSI) []
5. ELONGATION []
6. R.A. []
7. FATT (DEG.F) []
8. R.T. IMPACT (FT.LB.) []
9. U.S. IMPACT TEMP. (DEG.F) []
10. U.S. IMPACT ENG. (FT.LB.) []
11. U.S. KIC (KSI*SQRT(IN.)) []

C. MATERIAL PROPERTIES (RIM)

1. Y.S. (KSI) []
2. U.T.S. (KSI) []
3. ELONGATION []
4. R.A. []
5. FATT (DEG.F) []
6. R.T. IMPACT (FT.LB.) []
7. U.S. IMPACT TEMP. (DEG.F) []
8. U.S. IMPACT ENG. (FT.LB.) []
9. U.S. KIC (KSI*SQRT(IN.)) []

D. CHEMISTRY

C [] MN [] SI [] P [] CR [] MO [] V []
NI [] AS [] SB [] SN [] AL [] CU [] S []

E. BORE STRESS

SPEED (RPM) STRESS

1. 1800 (KSI) []
2. 2160 (120%) (KSI) []

F. CRACK DATA (KEYWAY RADIUS (IN) [])

1. A-CR-OP (1800 RPM) (IN.) []
2. A-CR-OS (OVERSPEED) (IN.) []

G. SERVICE DATA

1. OPER. TEMP. METAL TEMP. HUB (DEG.F) []
2. ESTIMATED MAX DA/DT (IN/HR) []
3. ESTIMATED MAX DA/DT (IN/MONTH) []

H. INSPECTION STATUS

1. OPERATING TIME AT INSPECTION (HR.) []
2. KEYWAY CRACK DEPTH (MAX.)-(IN.) []
3. BORE CRACK DEPTH (MAX.)-(IN.) []
4. DISK STATUS []

[] INDICATES WESTINGHOUSE PROPRIETARY
LEVELS B,C,E

DATE OF REPORT : 092280

ID # : D281100403

LP TURBINE DISC INFORMATION

A. UNIT IDENTIFICATION

1. BUILDING BLOCK 281
2. UNIT RANCHO SECO #1
3. CUSTOMER: SHUD.
4. LPM 2
5. LOCATION GOV
6. DISC 5
7. TEST NO. TN6621

B. MATERIAL PROPERTIES (HUB)

1. TYPE (MIN. Y.S. [] (KSI)) TO
2. SUPPLIER: MIDVALE HEPPESTALL
3. Y.S. (KSI) []
4. U.T.S. (KSI) []
5. ELONGATION []
6. R.A. []
7. FATT (DEG.F) []
8. R.T. IMPACT (FT.LB.) []
9. U.S. IMPACT TEMP. (DEG.F) []
10. U.S. IMPACT ENG. (FT.LB.) []
11. U.S. KIC (KSI*SQRT(IN.)) []

C. MATERIAL PROPERTIES (RIM)

1. Y.S. (KSI) []
2. U.T.S. (KSI) []
3. ELONGATION []
4. R.A. []
5. FATT (DEG.F) []
6. R.T. IMPACT (FT.LB.) []
7. U.S. IMPACT TEMP. (DEG.F) []
8. U.S. IMPACT ENG. (FT.LB.) []
9. U.S. KIC (KSI*SQRT(IN.)) []

D. CHEMISTRY

C [] MN [] SI [] P [] CR [] MO [] V []
NI [] AS [] SB [] SN [] AL [] CU [] S []

E. BORE STRESS

SPEED (RPM) STRESS

1. 1800 (KSI) []
2. 2160 (120%) (KSI) []

F. CRACK DATA (KEYWAY RADIUS (IN.) [])

1. A-CR-OP (1800 RPM) (IN.) []
2. A-CR-OS (OVERSPEED) (IN.) []

G. SERVICE DATA

1. OPER. TEMP. METAL TEMP. HUB (DEG.F) []
2. ESTIMATED MAX DA/DT (IN/HR) []
3. ESTIMATED MAX DA/DT (IN/MONTH) []

H. INSPECTION STATUS

1. OPERATING TIME AT INSPECTION (HR.) []
2. KEYWAY CRACK DEPTH (MAX.)-(IN.) []
3. BORE CRACK DEPTH (MAX.)-(IN.) []
4. DISK STATUS []

ID # : D281100403

DATE OF REPORT : 092280

LP TURBINE DISC INFORMATION

1. BUILDING BLOCK 281
2. UNIT
3. CUSTOMER: RANCHO SECO #1
4. LPM SHUD.
5. LOCATION 2
6. DISC# GOV
7. TEST NO. 4
TN6588

```

1. TYPE TD
  (MIN. Y.S. [ ](KSI))
2. SUPPLIER MIDVALE HEPPENSTALL
3. Y.S. (KSI) [
4. U.T.S. (KSI) [
5. ELONGATION [
6. R.A. [
7. FATT (DEG.F) [
8. R.T. IMPACT (FT.LB.) [
9. U.S. IMPACT TEMP. [
  (DEG.F)
10. U.S. IMPACT ENG. [
  (FT.LB.)
11. U.S. KIC [
  (KSI*SQRT(IN.))

```

1.	Y.S. (KSI)	[
2.	U.T.S. (KSI)	[
3.	ELONGATION	[
4.	R.A.	[
5.	FATT (DEG.F)	[
6.	R.T. IMPACT (FT.LB.)	[
7.	U.S. IMPACT TEMP. (DEG.F)	[
8.	U.S. IMPACT ENG. (FT.LB.)	[
9.	U.S. KIC (KSI*SQRT(IIN.))	[

C MN SI P CR MO V
NI AS SB SN AL CU S

SPEED (RPM) STRESS

1.	1600	(KS1)	[
2.	2160 (120*)	(KS1)	[

F. CRACK DATA (KEYWAY RADIUS (IN) [3]

1. A-CR-OP (1800 RPH) (IN.) []
2. A-CR-OS (OVERSPEED) (IN.) []

1. OPER. TEMP. METAL TEMP. HUB (DEG.F) []
2. ESTIMATED MAX DA/DT (IN/HR) []
3. ESTIMATED MAX DA/DT (IN/MONTH) []

```

1. OPERATING TIME AT INSPECTION (HR.) [
2. KEYWAY CRACK DEPTH (MAX.)-(IN.) [
3. BORE CRACK DEPTH (MAX.)-(IN.) [
4. DISK STATUS [

```

[] INDICATES WESTINGHOUSE PROPRIETARY
LEVELS B,C,E

DATE OF REPORT : 092280

ID # : 0281100403

LP TURBINE DISC INFORMATION

A. UNIT IDENTIFICATION

1. BUILDING BLOCK 281
2. UNIT RANCHO SECO #1
3. CUSTOMER: SMUD.
4. LPR 2
5. LOCATION GOV
6. DISC# 3
7. TEST NO. YN6648

B. MATERIAL PROPERTIES (HUB)

1. TYPE (MIN. Y.S. [] (KSI)) TD
2. SUPPLIER: BETHLEHEM STEEL
3. Y.S. (KSI) []
4. U.T.S. (KSI) []
5. ELONGATION []
6. R.A. []
7. FATT (DEG.F) []
8. R.T. IMPACT (FT.LB.) []
9. U.S. IMPACT TEMP. (DEG.F) []
10. U.S. IMPACT ENG. (FT.LB.) []
11. U.S. KIC (KSI*SQRT(IN.)) []

C. MATERIAL PROPERTIES (RIM)

1. Y.S. (KSI) []
2. U.T.S. (KSI) []
3. ELONGATION []
4. R.A. []
5. FATT (DEG.F) []
6. R.T. IMPACT (FT.LB.) []
7. U.S. IMPACT TEMP. (DEG.F) []
8. U.S. IMPACT ENG. (FT.LB.) []
9. U.S. KIC (KSI*SQRT(IN.)) []

D. CHEMISTRY

[] C [] MN [] SI [] P [] CR [] MO [] V []
[] NI [] AS [] SB [] SN [] AL [] CU [] S []

E. BORE STRESS

SPEED (RPM) STRESS

1. 1800 (KSI) []
2. 2160 (120%) (KSI) []

F. CRACK DATA (KEYWAY RADIUS (IN)) []

1. A-CR-OP (1800 RPM) (IN.) []
2. A-CR-OS (OVERSPEED) (IN.) []

G. SERVICE DATA

1. OPER. TEMP. METAL TEMP. HUB (DEG.F) []
2. ESTIMATED MAX DA/DT (IN/HR) []
3. ESTIMATED MAX DA/DT (IN/MONTH) []

H. INSPECTION STATUS

1. OPERATING TIME AT INSPECTION (HR.) []
2. KEYWAY CRACK DEPTH (MAX.)-(IN.) []
3. BORE CRACK DEPTH (MAX.)-(IN.) []
4. DISK STATUS []

[] INDICATES WESTINGHOUSE PROPRIETARY
LEVELS B,C,E

DATE OF REPORT : 092280

ID # : D281100403

LP TURBINE DISC INFORMATION

A. UNIT IDENTIFICATION

1. BUILDING BLOCK 281
2. UNIT
3. CUSTOMER: RANCHO SECO #1
4. LP# SHUD.
5. LOCATION 2 GOV
6. DISC# 2
7. TEST NO. TN6659

B. MATERIAL PROPERTIES (HUB)

1. TYPE (MIN. Y.S. [] (KSI))
2. SUPPLIER: UNITED STATES STEEL
3. Y.S. (KSI)
4. U.T.S. (KSI)
5. ELONGATION
6. R.A.
7. FATT (DEG.F)
8. R.T. IMPACT (FT.LB.)
9. U.S. IMPACT TEMP. (DEG.F)
10. U.S. IMPACT ENG. (FT.LB.)
11. U.S. KIC (KSI*SQRT(IN.))

C. MATERIAL PROPERTIES (RIM)

1. Y.S. (KSI)
2. U.T.S. (KSI)
3. ELONGATION
4. R.A.
5. FATT (DEG.F)
6. R.T. IMPACT (FT.LB.)
7. U.S. IMPACT TEMP. (DEG.F)
8. U.S. IMPACT ENG. (FT.LB.)
9. U.S. KIC (KSI*SQRT(IN.))

D. CHEMISTRY

C [] MN [] SI [] P [] CR [] MO [] V []
NI [] AS [] SB [] SN [] AL [] CU [] S []

E. BORE STRESS

SPEED (RPM) STRESS

1. 1800 (KSI) []
2. 2160 (120%) (KSI) []

F. CRACK DATA (KEYWAY RADIUS (IN) [])

1. A-CR-OP (1800 RPM) (IN.) []
2. A-CR-OS (OVERSPEED) (IN.) []

G. SERVICE DATA

1. OPER. TEMP. METAL TEMP. HUB (DEG.F) []
2. ESTIMATED MAX DA/DT (IN/HR) []
3. ESTIMATED MAX DA/DT (IN/MONTH) []

H. INSPECTION STATUS

1. OPERATING TIME AT INSPECTION (HR.) []
2. KEYWAY CRACK DEPTH (MAX.)-(IN.) []
3. BORE CRACK DEPTH (MAX.)-(IN.) []
4. DISK STATUS []

[] INDICATES WESTINGHOUSE PROPRIETARY
LEVELS B,C,E

DATE OF REPORT : 092280

ID # : D281100403

LP TURBINE DISC INFORMATION

A. UNIT IDENTIFICATION

1. BUILDING BLOCK 281
2. UNIT RANCHO SECO #1
3. CUSTOMER: SHUD.
4. LPH 2
5. LOCATION GOV
6. DISC# 1
7. TEST NO. TN6748

B. MATERIAL PROPERTIES (HUB)

1. TYPE TD
(MIN. Y.S. [] (KSI))
2. SUPPLIER: MIDVALE HEPPESTALL
3. Y.S. [KSI]
4. U.T.S. (KSI)
5. ELONGATION
6. R.A.
7. FATT (DEG.F)
8. R.T. IMPACT (FT.LB.)
9. U.S. IMPACT TEMP.
(DEG.F)
10. U.S. IMPACT ENG. []
(FT.LB.)
11. U.S. KIC []
(KSI*SQRT(IN.))

C. MATERIAL PROPERTIES (RIM)

1. Y.S. (KSI) []
2. U.T.S. (KSI) []
3. ELONGATION []
4. R.A. []
5. FATT (DEG.F) []
6. R.T. IMPACT (FT.LB.) []
7. U.S. IMPACT TEMP.
(DEG.F) []
8. U.S. IMPACT ENG. []
(FT.LB.)
9. U.S. KIC []
(KSI*SQRT(IN.))

D. CHEMISTRY

C [] MN [] SI [] P [] CR [] MO [] V []
NI [] AS [] SB [] SH [] AL [] CU [] S []

E. BORE STRESS

SPEED (RPM) STRESS

1. 1800 (KSI) []
2. 2160 (120%) (KSI) []

F. CRACK DATA (KEYWAY RADIUS (IN) [])

1. A-CR-OP (1800 RPM) (IN.) []
2. A-CR-OS (OVERSPEED) (IN.) []

G. SERVICE DATA

1. OPER. TEMP. METAL TEMP. HUB (DEG.F) []
2. ESTIMATED MAX DA/DT (IN/HR) []
3. ESTIMATED MAX DA/DT (IN/MONTH) []

H. INSPECTION STATUS

1. OPERATING TIME AT INSPECTION (HR.) []
2. KEYWAY CRACK DEPTH (MAX.)-(IN.) []
3. BORE CRACK DEPTH (MAX.)-(IN.) []
4. DISK STATUS []

[] INDICATES WESTINGHOUSE PROPRIETARY
LEVELS B,C,E

DATE OF REPORT : 092280

ID # : D281100402

LP TURBINE DISC INFORMATION

A. UNIT IDENTIFICATION		B. MATERIAL PROPERTIES (HUB)		C. MATERIAL PROPERTIES (RIM)	
1. BUILDING BLOCK	281	1. TYPE (MIN. Y.S. [] (KSI))	TO MIDVALE HEPPENSTALL	1. Y.S. (KSI)	[]
2. UNIT	RANCHO SECO #1	2. SUPPLIER:		2. U.T.S. (KSI)	[]
3. CUSTOMER:	SHUD.	3. Y.S. (KSI)	[]	3. ELONGATION	[]
4. LPM	1	4. U.T.S. (KSI)	[]	4. R.A.	[]
5. LOCATION	GEN	5. ELONGATION	[]	5. FATT (DEG.F)	[]
6. DISC#	5	6. R.A.	[]	6. R.T. IMPACT (FT.LB.)	[]
7. TEST NO.	TN6589	7. FATT (DEG.F)	[]	7. U.S. IMPACT TEMP.	[]
		8. R.T. IMPACT (FT.LB.)	[]	8. U.S. IMPACT ENG. (FT.LB.)	[]
		9. U.S. IMPACT TEMP. (DEG.F)	[]	9. U.S. KIC (KSI*SQRT(IN.))	[]
		10. U.S. IMPACT ENG. (FT.LB.)	[]		
		11. U.S. KIC (KSI*SQRT(IN.))	[]		

D. CHEMISTRY

C	MN	SI	P	CR	MO	V
[]	[]	[]	[]	[]	[]	[]
NI	AS	SB	SN	AL	CU	S
[]	[]	[]	[]	[]	[]	[]

E. BORE STRESS

F. CRACK DATA (KEYWAY RADIUS (IN) [])

SPEED (RPM) STRESS

1. 1800 {KSI} []
2. 2160 (120%) {KSI} []

1. A-CH-05 (OVERSPEED) (IN.) []

G. SERVICE DATA

1. OPER. TEMP. METAL TEMP. HUB (DEG.F) []
2. ESTIMATED MAX DA/DT (IN/HR) []
3. ESTIMATED MAX DA/DT (IN/MONTH) []

H. INSPECTION STATUS

1. OPERATING TIME AT INSPECTION (HR.) []
2. KEYWAY CRACK DEPTH (MAX.)-(IN.) []
3. BORE CRACK DEPTH (MAX.)-(IN.) []
4. DISK STATUS []

[] INDICATES WESTINGHOUSE PROPRIETARY
LEVELS B,C,E

DATE OF REPORT : 092280

ID # : D28100402

LP TURBINE DISC INFORMATION

A. UNIT IDENTIFICATION

1. BUILDING BLOCK 281
2. UNIT
3. CUSTOMER: RANCHO SECO #1
4. LPM SHUD.
5. LOCATION 1
6. DISC# GEN
7. TEST NO. TN6590

B. MATERIAL PROPERTIES (HUB)

1. TYPE (MIN. Y.S. [] (KSI)) TO
2. SUPPLIER: MIDVALE HEPPENSTALL
3. Y.S. (KSI) []
4. U.T.S. (KSI) []
5. ELONGATION []
6. R.A. []
7. FATT (DEG.F) []
8. R.T. IMPACT (FT.LB.) []
9. U.S. IMPACT TEMP. (DEG.F) []
10. U.S. IMPACT ENG. (FT.LB.) []
11. U.S. KIC (KSI*SQRT(IN.)) []

C. MATERIAL PROPERTIES (RIM)

1. Y.S. (KSI) []
2. U.T.S. (KSI) []
3. ELONGATION []
4. R.A. []
5. FATT (DEG.F) []
6. R.T. IMPACT (FT.LB.) []
7. U.S. IMPACT TEMP. (DEG.F) []
8. U.S. IMPACT ENG. (FT.LB.) []
9. U.S. KIC (KSI*SQRT(IN.)) []

D. CHEMISTRY

C [] MN [] SI [] P [] CR [] MO [] V []
NI [] AS [] SB [] SN [] AL [] CU [] S []

E. BORE STRESS

SPEED (RPM) STRESS

1. 1800 (KSI) []
2. 2160 (120%) (KSI) []

F. CRACK DATA (KEYWAY RADIUS (IN) [])

1. A-CR-OP (1800 RPM) (IN.) []
2. A-CR-OS (OVERSPEED) (IN.) []

G. SERVICE DATA

1. OPER. TEMP. METAL TEMP. HUB (DEG.F) []
2. ESTIMATED MAX DA/DT (IN/HR) []
3. ESTIMATED MAX DA/DT (IN/MONTH) []

H. INSPECTION STATUS

1. OPERATING TIME AT INSPECTION (HR.) []
2. KEYWAY CRACK DEPTH (MAX.)-(IN.) []
3. BORE CRACK DEPTH (MAX.)-(IN.) []
4. DISK STATUS []

[] INDICATES WESTINGHOUSE PROPRIETARY
LEVELS B,C,E

DATE OF REPORT : 092280

ID # : D281100402

LP TURBINE DISC INFORMATION

A. UNIT IDENTIFICATION		B. MATERIAL PROPERTIES (HUB)		C. MATERIAL PROPERTIES (RIM)	
1. BUILDING BLOCK	281	1. TYPE	TD	1. Y.S. (KSI)	
		(MIN. Y.S. [	](KSI))	2. U.T.S. (KSI)	
2. UNIT	RANCHO SECO #1	2. SUPPLIER:	BETHLEHEM STEEL	3. ELONGATION	
3. CUSTOMER:	SHUD.	3. Y.S. (KSI)	[	4. R.A.	
4. LPM	1	4. U.T.S. (KSI)	[	5. FATT (DEG.F)	
5. LOCATION	GEN	5. ELONGATION	[	6. R.T. IMPACT (FT.LB.)	
6. DISC#	3	6. R.A.	[	7. U.S. IMPACT TEMP.	
7. TEST NO.	TN6650	7. FATT (DEG.F)	[		
		8. R.T. IMPACT (FT.LB.)	[	8. U.S. IMPACT ENG.	
		9. U.S. IMPACT TEMP.	[	(DEG.F)	
		10. U.S. IMPACT ENG.	[	(FT.LB.)	
		11. U.S. KIC	[	9. U.S. KIC	
		(KSI*SQRT(IN.))		(KSI*SQRT(IN.))	
D. CHEMISTRY					
C	MN	SI	P	CR	MO
					V
NI	AS	SB	SN	AL	CU
					S
E. BORE STRESS			F. CRACK DATA (KEYWAY RADIUS (IN) [])		
SPEED (RPM)	STRESS				
1. 1800	(KSI) []		1. A-CR-OP (1800 RPM) (IN.) []		
2. 2160 (120%)	(KSI) []		2. A-CR-OS (OVERSPEED) (IN.) []		
G. SERVICE DATA					
1. OPER. TEMP. METAL TEMP. HUB (DEG.F)	[]				
2. ESTIMATED MAX DA/DT (IN/HR)	[]				
3. ESTIMATED MAX DA/DT (IN/MONTH)	[]				
H. INSPECTION STATUS					
1. OPERATING TIME AT INSPECTION (HR.)	[]				
2. KEYWAY CRACK DEPTH (MAX.)-(IN.)	[]				
3. BORE CRACK DEPTH (MAX.)-(IN.)	[]				
4. DISK STATUS	[]				

[] INDICATES WESTINGHOUSE PROPRIETARY
LEVELS B,C,E

DATE OF REPORT : 092280

ID # : D281100402

LP TURBINE DISC INFORMATION

A. UNIT IDENTIFICATION

1. BUILDING BLOCK 281
2. UNIT RANCHO SECO #1
3. CUSTOMER: SMUD.
4. LP# 1
5. LOCATION GEN
6. DISC# 2
7. TEST NO. TN6850

B. MATERIAL PROPERTIES (HUB)

1. TYPE (MIN. Y.S. [] (KSI))
2. SUPPLIER: MIDVALE HEPPENSTALL
3. Y.S. (KSI)
4. U.T.S. (KSI)
5. ELONGATION
6. R.A.
7. FATT (DEG.F)
8. R.T. IMPACT (FT.LB.)
9. U.S. IMPACT TEMP. (DEG.F)
10. U.S. IMPACT ENG. (FT.LB.)
11. U.S. KIC (KSI*SQRT(IN.))

C. MATERIAL PROPERTIES (RIM)

1. Y.S. (KSI)
2. U.T.S. (KSI)
3. ELONGATION
4. R.A.
5. FATT (DEG.F)
6. R.T. IMPACT (FT.LB.)
7. U.S. IMPACT TEMP. (DEG.F)
8. U.S. IMPACT ENG. (FT.LB.)
9. U.S. KIC (KSI*SQRT(IN.))

D. CHEMISTRY

C MN SI P CR MO V
NI AS SB SN AL CU S

E. BORE STRESS

SPEED (RPM) STRESS
1. 1800 (KSI) []
2. 2160 (120%) (KSI) []

F. CRACK DATA (KEYWAY RADIUS (IN) [])

1. A-CR-OP (1800 RPM) (IN.) []
2. A-CR-OS (OVERSPEED) (IN.) []

G. SERVICE DATA

1. OPER. TEMP. METAL TEMP. HUB (DEG.F) []
2. ESTIMATED MAX DA/DT (IN/HR) []
3. ESTIMATED MAX DA/DT (IN/MONTH) []

H. INSPECTION STATUS

1. OPERATING TIME AT INSPECTION (HR.) []
2. KEYWAY CRACK DEPTH (MAX.)-(IN.) []
3. BORE CRACK DEPTH (MAX.)-(IN.) []
4. DISK STATUS []

[] INDICATES WESTINGHOUSE PROPRIETARY
LEVELS B,C,E

DATE OF REPORT : 092280

ID # : D281100402

LP TURBINE DISC INFORMATION

A. UNIT IDENTIFICATION

1. BUILDING BLOCK 281
2. UNIT RANCHO SECQ #1
3. CUSTOMER: SHUD.
4. LP# 1
5. LOCATION GEN
6. DISC# 1
7. TEST NO. TN6743

B. MATERIAL PROPERTIES (HUB)

1. TYPE (MIN. Y.S. [] (KSI))
2. SUPPLIER: BETHLEHEM
3. Y.S. (KSI) []
4. U.T.S. (KSI) []
5. ELONGATION []
6. R.A. []
7. FATT (DEG.F) []
8. R.T. IMPACT (FT.LB.) []
9. U.S. IMPACT TEMP. (DEG.F) []
10. U.S. IMPACT ENG. (FT.LB.) []
11. U.S. KIC (KSI*SQRT(IN.)) []

C. MATERIAL PROPERTIES (RIM)

1. Y.S. (KSI) []
2. U.T.S. (KSI) []
3. ELONGATION []
4. R.A. []
5. FATT (DEG.F) []
6. R.T. IMPACT (FT.LB.) []
7. U.S. IMPACT TEMP. (DEG.F) []
8. U.S. IMPACT ENG. (FT.LB.) []
9. U.S. KIC (KSI*SQRT(IN.)) []

D. CHEMISTRY

C [] MN [] SI [] P [] CR [] MO [] V []
NI [] AS [] SB [] SN [] AL [] CU [] S []

E. BORE STRESS

SPEED (RPM) STRESS
1. 1800 (KSI) []
2. 2160 (120%) (KSI) []

F. CRACK DATA (KEYWAY RADIUS (IN) []

1. A-CR-OP (1800 RPM) (IN.) []
2. A-CR-OS (OVERSPEED) (IN.) []

G. SERVICE DATA

1. OPER. TEMP. METAL TEMP. HUB (DEG.F) []
2. ESTIMATED MAX DA/DT (IN/HR) []
3. ESTIMATED MAX DA/DT (IN/MONTH) []

H. INSPECTION STATUS

1. OPERATING TIME AT INSPECTION (HR.) []
2. KEYWAY CRACK DEPTH (MAX.)-(IN.) []
3. BORE CRACK DEPTH (MAX.)-(IN.) []
4. DISK STATUS []

[] INDICATES WESTINGHOUSE PROPRIETARY
LEVELS B,C,E

DATE OF REPORT : 092280

ID # : 0281100401

LP TURBINE DISC INFORMATION

A. UNIT IDENTIFICATION

1. BUILDING BLOCK 281
2. UNIT RANCHO SECO #1
3. CUSTOMER: SHUD.
4. LP# 1
5. LOCATION GOV
6. DISC# 5
7. TEST NO. TN6587

B. MATERIAL PROPERTIES (HUB)

1. TYPE (MIN. Y.S. [] (KSI)) TO
2. SUPPLIER: MIDVALE HEPPENSTALL
3. Y.S. (KSI) []
4. U.T.S. (KSI) []
5. ELONGATION []
6. R.A. []
7. FATT (DEG.F) []
8. R.T. IMPACT (FT.LB.) []
9. U.S. IMPACT TEMP. (DEG.F) []
10. U.S. IMPACT ENG. (FT.LB.) []
11. U.S. KIC (KSI*SQRT(IN.)) []

C. MATERIAL PROPERTIES (RIM)

1. Y.S. (KSI) []
2. U.T.S. (KSI) []
3. ELONGATION []
4. R.A. []
5. FATT (DEG.F) []
6. R.T. IMPACT (FT.LB.) []
7. U.S. IMPACT TEMP. (DEG.F) []
8. U.S. IMPACT ENG. (FT.LB.) []
9. U.S. KIC (KSI*SQRT(IN.)) []

D. CHEMISTRY

[] C [] MN [] SI [] P [] CR [] MO [] V
[] NI [] AS [] SB [] SN [] AL [] CU [] S

E. BORE STRESS

SPEED (RPM) STRESS

1. 1800 (KSI) []
2. 2160 (120%) (KSI) []

F. CRACK DATA (KEYWAY RADIUS (IN) [])

1. A-CH-OP (1800 RPM) (IN.) []
2. A-CH-OS (OVERSPEED) (IN.) []

G. SERVICE DATA

1. OPER. TEMP. METAL TEMP. HUB (DEG.F) []
2. ESTIMATED MAX DA/DT (IN/HR) []
3. ESTIMATED MAX DA/DT (IN/MONTH) []

H. INSPECTION STATUS

1. OPERATING TIME AT INSPECTION (HR.) []
2. KEYWAY CRACK DEPTH (MAX.)-(IN.) []
3. BORE CRACK DEPTH (MAX.)-(IN.) []
4. DISK STATUS []

[] INDICATES WESTINGHOUSE PROPRIETARY
LEVELS B,C,E

DATE OF REPORT : 092280

ID # : D281100401

LP TURBINE DISC INFORMATION

A. UNIT IDENTIFICATION

1. BUILDING BLOCK 281
2. UNIT
3. CUSTOMER: RANCHO SECO #1
SHUD.
4. LPM 1
5. LOCATION GOV
6. DISC# 4
7. TEST NO. TN6872

B. MATERIAL PROPERTIES (HUB)

1. TYPE TD
(MIN. Y.S. [] (KSI))
2. SUPPLIER: BETHLEHEM STEEL
3. Y.S. (KSI) []
4. U.T.S. (KSI) []
5. ELONGATION []
6. R.A. []
7. FATT (DEG.F) []
8. R.T. IMPACT (FT.LB.) []
9. U.S. IMPACT TEMP. (DEG.F) []
10. U.S. IMPACT ENG. (FT.LB.) []
11. U.S. KIC (KSI*SQRT(IN.)) []

C. MATERIAL PROPERTIES (RIM)

1. Y.S. (KSI) []
2. U.T.S. (KSI) []
3. ELONGATION []
4. R.A. []
5. FATT (DEG.F) []
6. R.T. IMPACT (FT.LB.) []
7. U.S. IMPACT TEMP. (DEG.F) []
8. U.S. IMPACT ENG. (FT.LB.) []
9. U.S. KIC (KSI*SQRT(IN.)) []

D. CHEMISTRY

C [] MN [] SI [] P [] CR [] MO [] V []
NI [] AS [] SB [] SN [] AL [] CU [] S []

E. BORE STRESS

SPEED (RPM) STRESS

1. 1800 (KSI) []
2. 2160 (120%) (KSI) []

F. CRACK DATA (KEYWAY RADIUS (IN) [])

1. A-CR-OP (1800 RPM) (IN.) []
2. A-CR-OS (OVERSPEED) (IN.) []

G. SERVICE DATA

1. OPER. TEMP. METAL TEMP. HUB (DEG.F) []
2. ESTIMATED MAX DA/DT (IN/HR) []
3. ESTIMATED MAX DA/DT (IN/MONTH) []

H. INSPECTION STATUS

1. OPERATING TIME AT INSPECTION (HR.) []
2. KEYWAY CRACK DEPTH (MAX.)-(IN.) []
3. BORE CRACK DEPTH (MAX.)-(IN.) []
4. DISK STATUS []

[] INDICATES WESTINGHOUSE PROPRIETARY
LEVELS B,C,E

DATE OF REPORT : 092280

ID # : D281100401

LP TURBINE DISC INFORMATION

A. UNIT IDENTIFICATION

1. BUILDING BLOCK 281
2. UNIT RANCHO SECO #1
3. CUSTOMER: SHUD.
4. LP# 1
5. LOCATION GOV
6. DISC# 3
7. TEST NO. TN6651

B. MATERIAL PROPERTIES (HUB)

1. TYPE (MIN. Y.S. [] TD [](KSI))
2. SUPPLIER: BETHLEHEM STEEL
3. Y.S. [](KSI)
4. U.T.S. [](KSI)
5. ELONGATION []
6. R.A. []
7. FATT (DEG.F) []
8. R.T. IMPACT (FT.LB.) []
9. U.S. IMPACT TEMP. (DEG.F) []
10. U.S. IMPACT ENG. (FT.LB.) []
11. U.S. KIC [](KSI*SQRT(IN.))

C. MATERIAL PROPERTIES (RIM)

1. Y.S. [](KSI)
2. U.T.S. [](KSI)
3. ELONGATION []
4. R.A. []
5. FATT (DEG.F) []
6. R.T. IMPACT (FT.LB.) []
7. U.S. IMPACT TEMP. (DEG.F) []
8. U.S. IMPACT ENG. (FT.LB.) []
9. U.S. KIC [](KSI*SQRT(IN.))

D. CHEMISTRY

C [] MN [] SI [] P [] CR [] MO [] V []
NI [] AS [] SB [] SN [] AL [] CU [] S []

E. BORE STRESS

SPEED (RPM) STRESS

1. 1800 [](KSI)
2. 2160 (120%) [](KSI)

F. CRACK DATA (KEYWAY RADIUS (IN) [])

1. A-CR-OP (1800 RPM) (IN.) []
2. A-CR-OS (OVERSPEED) (IN.) []

G. SERVICE DATA

1. OPER. TEMP. METAL TEMP. HUB (DEG.F) []
2. ESTIMATED MAX DA/DT (IN/HR) []
3. ESTIMATED MAX DA/DT (IN/MONTH) []

H. INSPECTION STATUS

1. OPERATING TIME AT INSPECTION (HR.) []
2. KEYWAY CRACK DEPTH (MAX.)-(IN.) []
3. BORE CRACK DEPTH (MAX.)-(IN.) []
4. DISK STATUS []

[] INDICATES WESTINGHOUSE PROPRIETARY
LEVELS B,C,E

DATE OF REPORT : 092280

ID # : D281100401

LP TURBINE DISC INFORMATION

A. UNIT IDENTIFICATION

1. BUILDING BLOCK 281
2. UNIT
3. CUSTOMER: RANCHO SECO #1
4. LPM SHUD.
5. LOCATION 1 GOV
6. DISC# 2
7. TEST NO. TN6657

B. MATERIAL PROPERTIES (HUB)

1. TYPE (MIN. Y.S. [] (KSI)) TE
2. SUPPLIER: UNITED STATES STEEL
3. Y.S. (KSI) []
4. U.T.S. (KSI) []
5. ELONGATION []
6. R.A. []
7. FATT (DEG.F) []
8. R.T. IMPACT (FT.LB.) []
9. U.S. IMPACT TEMP. (DEG.F) []
10. U.S. IMPACT ENG. (FT.LB.) []
11. U.S. KIC (KSI*SQRT(IN.)) []

C. MATERIAL PROPERTIES (RIM)

1. Y.S. (KSI) []
2. U.T.S. (KSI) []
3. ELONGATION []
4. R.A. []
5. FATT (DEG.F) []
6. R.T. IMPACT (FT.LB.) []
7. U.S. IMPACT TEMP. (DEG.F) []
8. U.S. IMPACT ENG. (FT.LB.) []
9. U.S. KIC (KSI*SQRT(IN.)) []

D. CHEMISTRY

C [] MN [] SI [] P [] CR [] MO [] V []
NI [] AS [] SB [] SN [] AL [] CU [] S []

E. BORE STRESS

SPEED (RPM) STRESS

1. 1800 (KSI) []
2. 2160 (120%) (KSI) []

F. CRACK DATA (KEYWAY RADIUS (IN.) [])

1. A-CR-CP (1800 RPM) (IN.) []
2. A-CR-OS (OVERSPEED) (IN.) []

G. SERVICE DATA

1. OPER. TEMP. METAL TEMP. HUB (DEG.F) []
2. ESTIMATED MAX DA/DT (IN/HR) []
3. ESTIMATED MAX DA/DT (IN/MONTH) []

H. INSPECTION STATUS

1. OPERATING TIME AT INSPECTION (HR.) []
2. KEYWAY CRACK DEPTH (MAX.)-(IN.) []
3. BORE CRACK DEPTH (MAX.)-(IN.) []
4. DISK STATUS []

[] INDICATES WESTINGHOUSE PROPRIETARY
LEVELS B,C,E

DATE OF REPORT : 092280

ID # : D281100401

LP TURBINE DISC INFORMATION

A. UNIT IDENTIFICATION

1. BUILDING BLOCK 781
2. UNIT
3. CUSTOMER: RANCHO SECO #1
4. LPM SHUD.
5. LOCATION GOV
6. DISC# 1
7. TEST NO. TN6750

B. MATERIAL PROPERTIES (HUB)

1. TYPE (MIN. Y.S. [] TO [] (KSI))
2. SUPPLIER: MIDVALE HEPPENSTALL
3. Y.S. (KSI) []
4. U.T.S. (KSI) []
5. ELONGATION []
6. R.A. []
7. FATT (DEG.F) []
8. R.T. IMPACT (FT.LB.) []
9. U.S. IMPACT TEMP. (DEG.F) []
10. U.S. IMPACT ENG. (FT.LB.) []
11. U.S. KIC (KSI*SQRT(IN.)) []

C. MATERIAL PROPERTIES (RIM)

1. Y.S. (KSI) []
2. U.T.S. (KSI) []
3. ELONGATION []
4. R.A. []
5. FATT (DEG.F) []
6. R.T. IMPACT (FT.LB.) []
7. U.S. IMPACT TEMP. (DEG.F) []
8. U.S. IMPACT ENG. (FT.LB.) []
9. U.S. KIC (KSI*SQRT(IN.)) []

D. CHEMISTRY

C [] MN [] SI [] P [] CR [] MO [] V []
NI [] AS [] SB [] SN [] AL [] CU [] S []

E. BORE STRESS

SPEED (RPM) STRESS

1. 1800 (KSI) []
2. 2160 (1120*) (KSI) []

F. CRACK DATA (KEYWAY RADIUS (IN)) []

1. A-CR-OP (1800 RPM) (IN.) []
2. A-CR-OS (OVERSPEED) (IN.) []

G. SERVICE DATA

1. OPER. TEMP. METAL TEMP. HUB (DEG.F) []
2. ESTIMATED MAX DA/DT (IN/HR) []
3. ESTIMATED MAX DA/DT (IN/MONTH) []

H. INSPECTION STATUS

1. OPERATING TIME AT INSPECTION (HR.) []
2. KEYWAY CRACK DEPTH (MAX.)-(IN.) []
3. BORE CRACK DEPTH (MAX.)-(IN.) []
4. DISK STATUS []

March 14, 1980

Darrell G. Eisenhut
Division of Operating Reactors
Office of Nuclear Reactor Regulation
US Nuclear Regulatory Commission
Washington DC 20555

APPLICATION FOR WITHHOLDING PROPRIETARY
INFORMATION FROM PUBLIC DISCLOSURE

Subject: Rancho Seco Generating Station - Unit #1 Docket #50-312
Information in Response to NRC Request for Information of
February 25, 1980, Relative to Low Pressure Turbine Disc
Integrity.

Reference: Appendix A letter from J. J. Mattinoe to Eisenhut, dated 3/19/80

Dear Mr. Eisenhut:

This application for withholding is submitted by Westinghouse Electric Corporation ("Westinghouse") pursuant to the provisions of paragraph (b)(1) of Section 2.790 of the Commission's regulations. Withholding from public disclosure is requested with respect to the subject information which is further identified in the affidavit accompanying this application.

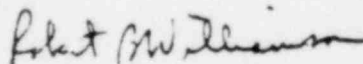
The undersigned has reviewed the information sought to be withheld and is authorized to apply for its withholding on behalf of Westinghouse, STG-TOD.

The affidavit accompanying this application sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of Section 2.790 of the Commission's regulations.

Accordingly, it is respectfully requested that the subject information which is proprietary to Westinghouse and which is further identified in the affidavit be withheld from public disclosure in accordance with 10CFR Section 2.790 of the Commission's regulations.

Correspondence with respect to this application for withholding or the accompanying affidavit should be addressed to the undersigned.

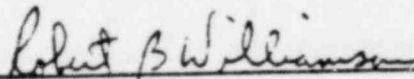
Very truly yours,


R. Williamson, Manager
Customer Order Engineering
Westinghouse Electric Corporation

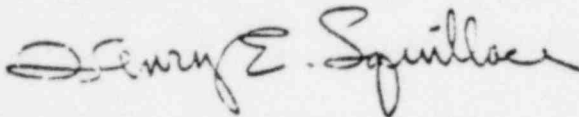
AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF DELAWARE:

Before me, the undersigned authority, personally appeared Robert Williamson, who, being by me duly sworn according to law, deposes and says that he is authorized to execute this Affidavit on behalf of Westinghouse Electric Corporation ("Westinghouse") and that the averments of fact set forth in this Affidavit are true and correct to the best of his knowledge, information, and belief:


Robert Williamson, Manager
Customer Order Engineering

Sworn to and subscribed before me
this 25 day of May 1980



HENRY E. SQUILLACE
Notary Public, Marple Twp., Delaware Co.
My Commission Expires Oct. 18, 1980

- (1) I am Manager, Customer Order Engineering in the Steam Turbine Generator Technical Operations Division of Westinghouse Electric Corporation and as such, I have been specifically delegated the function of reviewing the proprietary information sought to be withheld from public disclosure in connection with nuclear power plant licensing, and am authorized to apply for its withholding on behalf of the Westinghouse Power Generation Divisions.
- (2) I am making this Affidavit in conformance with the provisions of 10 CFR Section 2.790 of the Commission's regulations and in conjunction with the Westinghouse application for withholding accompanying this Affidavit.
- (3) I have personal knowledge of the criteria and procedures utilized by Westinghouse Power Generation Divisions in designating information as a trade secret, privileged or as confidential commercial or financial information.
- (4) Pursuant to the provisions of paragraph (b)(4) of Section 2.790 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure should be withheld.
 - (i) The information sought to be withheld from public disclosure is owned and has been held in confidence by Westinghouse.
 - (ii) The information is of a type customarily held in confidence by Westinghouse and not customarily disclosed to the public. Westinghouse has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The application of that system and the substance of that system constitutes Westinghouse policy and provides the rational basis required.

Under that system, information is held in confidence if it falls in one or more of several types, the release of which might result in the loss of an existing or potential competitive advantage, as follows:

- (a) The information reveals the distinguishing aspects of a process (or component, structure, tool, method, etc.) where prevention of its use by any of Westinghouse's competitors without license from Westinghouse constitutes a competitive economic advantage over other companies.
- (b) It consists of supporting data, including test data, relative to a process (or component, structure, tool, method, etc.), the application of which data secures a competitive economic advantage, e.g., by optimization or improved marketability.
- (c) Its use by a competitor would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing a similar product.
- (d) It reveals cost or price information, production capacities, budget levels, or commercial strategies of Westinghouse, its customers or suppliers.
- (e) It reveals aspects of past, present, or future Westinghouse or customer funded development plans and programs of potential commercial value to Westinghouse.
- (f) It contains patentable ideas, for which patent protection may be desirable.
- (g) It is not the property of Westinghouse, but must be treated as proprietary by Westinghouse according to agreements with the owner.

- (h) Public disclosure of this information would allow unfair and untruthful judgments on the performance and reliability of Westinghouse equipment components and improper comparison with similar components made by competitors.

There are sound policy reasons behind the Westinghouse system which include the following:

- (a) The use of such information by Westinghouse gives Westinghouse a competitive advantage over its competitors. It is, therefore, withheld from disclosure to protect the Westinghouse competitive position.
- (b) It is information which is marketable in many ways. The extent to which such information is available to competitors diminishes the Westinghouse ability to sell products and services involving the use of the information.
- (c) Use by our competitor would put Westinghouse at a competitive disadvantage by reducing his expenditure of resources at our expense.
- (d) Each component of proprietary information pertinent to a particular competitive advantage is potentially as valuable as the total competitive advantage. If competitors acquire components of proprietary information, any one component may be the key to the entire puzzle, thereby depriving Westinghouse of a competitive advantage.
- (e) Unrestricted disclosure would jeopardize the position of prominence of Westinghouse in the world market, and thereby give a market advantage to the competition in those countries.

- (f) The Westinghouse capacity to invest corporate assets in research and development depends upon the success in obtaining and maintaining a competitive advantage.
- (iii) The information is being transmitted to the Commission in confidence and, under the provisions of 10 CFR Section 2.790, it is to be received in confidence by the Commission.
- (iv) The information is not available in public sources to the best of our knowledge and belief.
- (v) The proprietary information sought to be withheld in this submittal is that which is appropriately marked in Appendix A to letter from J. J. Mattinoe to Eisenhut, dated March 19, 1980 concerning information in response to NRC request for information of February 25, 1980, relative to low pressure turbine disc integrity.

The information enables Westinghouse to:

- (a) Develop test inputs and procedures to satisfactorily verify the design of Westinghouse supplied equipment.
- (b) Assist its customers to obtain licenses.

Further, the information has substantial commercial value as follows.

- (a) Westinghouse can sell the use of this information to customers.
- (b) Westinghouse uses the information to verify the design of equipment which is sold to customers.

(c) Westinghouse can sell services based upon the experience gained and the test equipment and methods developed.

Public disclosure of this information is likely to cause substantial harm to the competitive position of Westinghouse because it would enhance the ability of competitors to design, manufacture, verify, and sell electrical equipment for commercial turbine-generators without commensurate expenses. Also, public disclosure of the information would enable others having the same or similar equipment to use the information to meet NRC requirements for licensing documentation without purchasing the right to use the information.

The development of the equipment described in part by the information is the result of many years of development by Westinghouse and the expenditure of a considerable sum of money.

This could only be duplicated by a competitor if he were to invest similar sums of money and provided he had the appropriate talent available and could somehow obtain the requisite experience.

Further the deponent sayeth not.