

**FINAL REPORT 10CFR PART 21  
REPORTING OF DEFECTS AND NON-COMPLIANCE**

PREPARED BY: Edward Grandusky  
TITLE: Nuclear Product Engineer  
DATED: August 30, 1994  
TIME: 3:30 AM/PM  
PART NAME: Gimpel - Trip & Throttle Valve

File No.: F-37686 A/B  
Serial No.: T-37686 A/B  
Type: GS-2N  
Ref.: N/A  
D-R Part No.: N/A  
D-R Dwg. No.: N/A  
Rev. Level:

1. Description of Defect or Non-Compliance:

See Attachment, Pg. 2 as required

2. Safety Hazard Created or Non-Compliance:

See Attachment, Pg. 2 as required

3. Number and Location of all such components which contain this defect or fail to comply with 10CFR21:

See Attachment, Pg. 2 as required

4. Corrective Action by the following individual Product Engineer By Date 08/11/94

See Attachment, Pg. 2 as required

5. Advice to Customer related to defect or non-compliance:

060114

9409150014 940830  
PDR ADDCK 05000346  
S PDR

See Attachment, Pg. 2 as required

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#### Description of Defect or Non-Compliance

By Gimpel's design, the secure attachment of the coupling, item(29) on Gimpel drawing P-2989, to the stem, item(28), is assured by spotting the valve stem with a .25 drill .125 deep after proper location is determined at assembly. The set screw is then threaded into the coupling until it seats in this spot and then staked in place. The original valve stem at Davis Besse unit 1 was not spotted to receive the set screw and the setscrew was locked in the coupling and not making contact with the stem.

#### Safety Hazard Created or Non-Compliance

When the coupling is not properly locked to the stem, the stem is able to rotate and unthread from the coupling. The valve is then inoperable and the safety related function of the turbine is compromised.

#### Number and Location of all such components that could contain this defect

The only site that has reported this defect is Toledo Edison at the Davis Besse site. Pages 3 to 9 list the turbine S/N and location of all known Gimpel T&T valves in Nuclear Applications that could experience this problem.

#### Corrective Action

1. Dresser-Rand has changed the Nuclear Part Inspection Records for both the coupling and the stem to require that these parts be tagged with the proper assembly instructions. (See Appendix for samples)
2. The Nuclear Part Inspection Records for the couplings were also changed to verify the set screw hole is tapped fully through.
3. Dresser-Rand Quality assurance will implement a source inspection requirement for all future Gimpel T&T valve orders or verify this assembly is correct at D-R source inspection. Existing Nuclear Part Inspection Records for complete valve assemblies are revised to call for this inspection.

#### Advice to Customer

All Utilities should immediately do a visual inspection of the thread engagement of the stem to coupling to determine operating status of valve. This should be followed by a disassembling and inspection of the coupling and valve stem. The inspection should verify all of the following:

1. The valve stem has been spotted for receiving the set screw
2. The set screw can be threaded through the coupling and engage the stem.
3. The setscrew is securely seated in the drill spot when assembled.
4. The setscrew is adequately staked in place to prevent it from backing out.

| SERIAL NUMBER | UTILITY                     | SITE INFORMATION   |
|---------------|-----------------------------|--------------------|
| -----         | -----                       | -----              |
| T35685A       | T.V.A.                      | BROWNS FERRY 1     |
| T35686A       | T.V.A.                      | BROWNS FERRY 2     |
| T35687A       | T.V.A.                      | BROWNS FERRY 3     |
| T35688A       | COMMONWEALTH EDISON CO      | QUAD CITIES        |
| T35689A       | COMMONWEALTH EDISON CO      | QUAD CITIES        |
| T35690A       | NORTHERN STATES POWER CO    | MONTICELLO         |
| T35691A       | PHILADELPHIA ELECTRIC CO    | PEACH BOTTOM 2 & 3 |
| T35692A       | PHILADELPHIA ELECTRIC CO    | PEACH BOTTOM 2 & 3 |
| T35693A       | BOSTON EDISON CO            | PILGRIM 1          |
| T35938A       | VERMONT YANKEE NUCLEAR      | VERMONT YANKEE     |
| T35939A       | NEBRASKA PUBLIC POWER       | COOPER             |
| T35940A       | NEW YORK POWER AUTHORITY    | J.A.FITZPATRICK    |
| T36178A       | VIRGINIA ELEC. & POWER CO.  | SURRY 1            |
| T36179A       | VIRGINIA ELEC. & POWER CO.  | SURRY 1            |
| T36181A       | WISCONSIN ELECTRIC POWER CO | POINT BEACH        |
| T36182A       | WISCONSIN ELECTRIC POWER CO | POINT BEACH        |
| T36318A       | VIRGINIA ELEC. & POWER CO.  | SURRY 2            |
| T36319A       | VIRGINIA ELEC. & POWER CO.  | SURRY 2            |
| T36320A       | VIRGINIA ELEC. & POWER CO.  | SURRY 2            |
| T36321A       | VIRGINIA ELEC. & POWER CO.  | SURRY 2            |
| T36546A       | MAINE YANKEE ATOMIC POWER   | MAINE YANKEE       |
| T36555A       | DUQUESNE LIGHT CO           | BEAVER VALLEY 1    |
| T37008A       | NORTHERN STATES POWER CO.   | PRAIRIE ISLAND 1   |
| T37008B       | NORTHERN STATES POWER CO.   | PRAIRIE ISLAND 2   |
| T37035A       | WISCONSIN PUBLIC SERVICE    | KEWAUNEE           |
| T37059A       | VIRGINIA ELEC. & POWER CO.  | NORTH ANNA 1       |
| T37059B       | VIRGINIA ELEC. & POWER CO.  | NORTH ANNA 2       |

| SERIAL NUMBER | UTILITY                     | SITE INFORMATION                 |
|---------------|-----------------------------|----------------------------------|
| T37168A       | SMUD                        | RANCHO SECO                      |
| T37273A       | NORTHEAST UTILITIES SERVICE | MILLSTONE 2                      |
| T37665A       | ARKANSAS POWER & LIGHT      | ARKANSAS NUCLEAR ONE             |
| T37686A       | TOLEDO EDISON CO.           | DAVIS BESSE                      |
| T37686B       | TOLEDO EDISON CO.           | DAVIS BESSE                      |
| T37948A       | DUKE POWER CO.              | McGUIRE 1                        |
| T37948B       | DUKE POWER CO.              | McGUIRE 2                        |
| T38032A       | VIRGINIA ELEC.& POWER CO.   | NORTH ANNA 3<br>CANCELED PLANT   |
| T38032B       | VIRGINIA ELEC.& POWER CO.   | NORTH ANNA 4<br>CANCELED PLANT   |
| T38117A       | ELECTRICITE DE FRANCE       | FESSENHIEM                       |
| T38117B       | ELECTRICITE DE FRANCE       | FESSENHIEM                       |
| T38170A       | HIDROELECTRICA ESPANOLA     | COFRENTES                        |
| T38171A       | NIAGARA MOHAWK POWER CORP.  | NINE MILE POINT 2                |
| T38172A       | TAIWAN POWER CO             | KUO-SHENG                        |
| T38173A       | ENTE NAZIONALE PER          | ALTO LAZIO                       |
| T38174A       | KERNKRAFTWERK LEIBSTADT AG  | LEIBSTADT                        |
| T38175A       | MISSISSIPPI POWER & LIGHT   | GRAND GULF 1                     |
| T38176A       | CLEVELAND ELEC.             | PERRY                            |
| T38177A       | HOUSTON LIGHTING & POWER CO | ALLENS CREEK 1<br>CANCELED PLANT |
| T38178A       | TAIWAN POWER CO             | KUO-SHENG                        |
| T38179A       | ASOCIACION NUCLEAR          | CNV                              |
| T38180A       | MISSISSIPPI POWER & LIGHT   | GRAND GULF                       |
| T38181A       | CLEVELAND ELEC.             | PERRY                            |
| T38182A       | GULF STATES UTILITIES CO    | RIVERBEND 1                      |
| T38183A       | PUGET SOUND POWER & LIGHT   | SHAGIT 1<br>CANCELED PLANT       |

| SERIAL NUMBER | UTILITY                     | SITE INFORMATION             |
|---------------|-----------------------------|------------------------------|
| T38134A       | T.V.A.                      | HARTSVILLE<br>CANCELED PLANT |
| T38185A       | T.V.A.                      | HARTSVILLE<br>CANCELED PLANT |
| T38186A       | ASICIACION NUCLEAR          | CNV                          |
| T38187A       | ILLINOIS POWER CO           | CLINTON                      |
| T38280A       | LOUISIANA POWER & LIGHT CO  | WATERFORD 3                  |
| T38467A       | CENTRAL NUCLEAR DE ALMARAZ  | ALMARAZ 1                    |
| T38467B       | CENTRAL NUCLEAR DE ALMARAZ  | ALMARAZ 2                    |
| T38483A       | CAROLINA POWER & LIGHT      | SHARON-HARRIS                |
| T38483B       | CAROLINA POWER & LIGHT CO   | SHARON-HARRIS                |
| T38483C       | CAROLINA POWER & LIGHT CO   | SHARON-HARRIS                |
| T38483D       | CAROLINA POWER & LIGHT CO   | SHARON-HARRIS                |
| T38492A       | DUQUESNE LIGHT CO           | BEAVER VALLEY 2              |
| T38498A       | ELECTRICITE DE FRANCE       | BUGEY                        |
| T38498B       | ELECTRICITE DE FRANCE       | BUGEY                        |
| T38587A       | NORTHEAST UTILITIES SERVICE | MILLSTONE 3                  |
| T38677A       | T.V.A.                      | WATTS BAR 1                  |
| T38677B       | T.V.A.                      | WATTS BAR 2                  |
| T38765A       | SOUTH CAROLINA ELEC. & GAS  | SUMMER 1                     |
| T38848A       | FURNAS CENTRAIS ELECTRICAS  | ANGRA                        |
| T38880A       | ELECTRICITE DE FRANCE       | BUGEY                        |
| T38880B       | ELECTRICITE DE FRANCE       | BUGEY                        |
| T39622A       | TEXAS UTILITIES GENERATING  | COMANCHE PEAK 1              |
| T39622B       | TEXAS UTILITIES GENERATING  | COMANCHE PEAK 2              |
| T39623A       | FUERZAS ELECTRICAS DE       | ASCO 1                       |
| T39623B       | FUERZAS ELECTRICAS DE       | ASCO 2                       |
| T40040A       | T.V.A.                      | HARTSVILLE<br>CANCELED PLANT |

| SERIAL NUMBER | UTILITY                     | SITE INFORMATION              |
|---------------|-----------------------------|-------------------------------|
| -----         | -----                       | -----                         |
| T40041A       | T.V.A.                      | HARTSVILLE<br>CANCELED PLANT  |
| T40042A       | T.V.A.                      | PHIPPS BEND<br>CANCELED PLANT |
| T40043A       | T.V.A.                      | PHIPPS BEND<br>CANCELED PLANT |
| T40096A       | DUKE POWER CO               | CATAWBA 1                     |
| T40096B       | DUKE POWER CO               | CATAWBA 2                     |
| T40101A       | SO. CALIF. EDISON CO.       | SAN ONOFRE 2                  |
| T40101B       | SO. CALIF. EDISON CO.       | SAN ONOFRE 3                  |
| T40176A       | UNION ELECTRIC CO           | CALLAWAY                      |
| T40177A       | KANSAS GAS & ELECTRIC CO    | WOLF CREEK                    |
| T40225A       | CONSUMERS POWER CO.         | MIDLAND                       |
| T40225B       | CONSUMERS POWER CO.         | MIDLAND                       |
| T40230A       | FLORIDA POWER & LIGHT CO.   | ST. LUCIE 2                   |
| T40349A       | WASHINGTON PUBLIC POWER     | WPPSS 1                       |
| T40349B       | WASHINGTON PUBLIC POWER     | WPPSS 4                       |
| T40366A       | NUKLEARNA ELEKTRARNA KRSKO  | KRSKO                         |
| T40568A       | ARIZONA PUBLIC SERVICE CO   | PALO VERDE 1                  |
| T40568B       | ARIZONA PUBLIC SERVICE CO   | PALO VERDE 2                  |
| T40568C       | ARIZONA PUBLIC SERVICE CO   | PALO VERDE 3                  |
| T40593A       | EBES N.V.                   | DOEL 3                        |
| T40716A       |                             | ALTO LAZIO II                 |
| T40749A       | HOUSTON LIGHTING & POWER CO | SOUTH TEXAS 1                 |
| T40749B       | HOUSTON LIGHTING & POWER CO | SOUTH TEXAS 2                 |
| T40809A       | WASHINGTON PUBLIC POWER     | WPPSS 3                       |
| T40809B       | WASHINGTON PUBLIC POWER     | WPPSS 3                       |
| T40809C       | WASHINGTON PUBLIC POWER     | WPPSS 5                       |
| T40809D       | WASHINGTON PUBLIC POWER     | WPPSS 5                       |

| SERIAL NUMBER | UTILITY                    | SITE INFORMATION     |
|---------------|----------------------------|----------------------|
| -----         | -----                      | -----                |
| T40814A       | INTERCOM S.A.              | HAY, LIEGE           |
| T40893A       | TAIWAN POWER CO.           | MAANSHAN 1           |
| T40893B       | TAIWAN POWER CO.           | MAANSHAN 2           |
| T40905A       | TOKYO ELECTRIC CO          | FUKUSHIMA DAINI 2-1  |
| T41056A       | CAROLINA POWER & LIGHT CO  | SHEARON HARRIS 1     |
| T41057A       | CAROLINA POWER & LIGHT CO  | SHEARON HARRIS 2     |
| T41062A       | PUBLIC SERVICE OF NEW      | SEABROOK 1           |
| T41063A       | PUBLIC SERVICE OF NEW      | SEABROOK 2           |
| T41170A       | EBES N.V.                  | DOEL 4               |
| T41171A       | KOREA ELECTRIC POWER CORP. | KORI 2               |
| T41172A       | NATIONAL POWER CORP.       | AGAC 1               |
| T41173A       | GEORGIA POWER CO.          | ALVIN W. VOGTLE 1    |
| T41173B       | GEORGIA POWER CO.          | ALVIN W. VOGTLE 2    |
| T41411A       | TOKYO ELECTRIC POWER CO    | FUKUSHIMA DAINA 2-2  |
| T41482A       | KOREA ELECTRIC POWER CORP. | KORI 5               |
| T41482B       | KOREA ELECTRIC POWER CORP. | KORI 6               |
| T41695A       | TOKYO ELECTRIC POWER CO    | FUKUSHIMA DAINI 2-3  |
| T41696A       | TOKYO ELECTRIC POWER CO    | KASHIWAZAKI KARIWA 1 |
| T41812A       | FLORIDA POWER & LIGHT CO   | TURKEY POINT 3&4     |
| T41812B       | FLORIDA POWER & LIGHT CO   | TURKEY POINT 3&4     |
| T41912C       | FLORIDA POWER & LIGHT CO   | TURKEY POINT 3&4     |
| T41862A       | TOKYO ELECTRIC POWER CO    | FUKUSHIMA DAINI 2-4  |
| T41925A       | ASOCIACION NUCLEAR         | VANDELLOS 2          |
| T41930A       | KOREA ELECTRIC POWER CORP  | KORI 7               |
| T41930B       | KOREA ELECTRIC POWER CORP  | KORI 8               |
| T42006A       | INTERCOM S.A.              | TIHANGE 3            |
| T42054A       | ELECTRICITE DE FRANCE      | PALUEL               |
| T42055A       | ELECTRICITE DE FRANCE      | PALUEL               |

| SERIAL NUMBER | UTILITY                   | SITE INFORMATION     |
|---------------|---------------------------|----------------------|
| T42264A       | ARKANSAS POWER & LIGHT    | ARKANSAS NUCLEAR ONE |
| T42265A       | ELECTRICITE DE FRANCE     | ST. ALBAN            |
| T42266A       | ELECTRICITE DE FRANCE     | FLAMANVILLE          |
| T42272A       | ELECTRICITE DE FRANCE     | PALUEL               |
| T42319A       | ELECTRICITE DE FRANCE     | CATTENOM             |
| T42320A       | ELECTRICITE DE FRANCE     | ST. ALBAN            |
| T42374A       | ELECTRICITE DE FRANCE     | CATTENOM             |
| T42423A       | ELECTRICITE DE FRANCE     | FLAMANVILLE          |
| T42461A       | ELECTRICITE DE FRANCE     | PALUEL               |
| T42514A       | ELECTRICITE DE FRANCE     | BELLEVILLE           |
| T42623A       | ELECTRICITE DE FRANCE     | NOGENT               |
| T42699A       | FIAT                      | TRINO                |
| T42699B       | FIAT                      | TRINO                |
| T42699C       | FIAT                      | TRINO                |
| T42699D       | FIAT                      | TRINO                |
| T42741A       | ELECTRICITE DE FRANCE     | BELLEVILLE 2         |
| T42830A       | ELECTRICITE DE FRANCE     | NOGENT               |
| T42891A       | ELECTRICITE DE FRANCE     | CATTENOM             |
| T43009A       | ELECTRICITE DE FRANCE     | CENTRALE DE PENLY 1  |
| T43040A       | ELECTRICITE DE FRANCE     | CHOOZ                |
| T43040B       | ELECTRICITE DE FRANCE     | CHOOZ;               |
| T43040C       | ELECTRICITE DE FRANCE     | CHOOZ;               |
| T43040D       | ELECTRICITE DE FRANCE     | CHOOZ;               |
| T43092A       | ELECTRICITE DE FRANCE     | CHOOZ;               |
| T43093B       | ELECTRICITE DE FRANCE     | CHOOZ                |
| T90033A       | NEW BRUNSWICK ELEC. POWER | POINT LEPREAU        |



# TURBODYNE UNITS

| SERIAL NUMBER | UTILITY                    | SITE INFORMATION  |
|---------------|----------------------------|-------------------|
| 26172         | SOUTHERN CALIFORNIA EDISON | SAN ONOFRE        |
| 26635         | ROCHESTER GAS & ELECTRIC   | GINNA             |
| 27206         | CONSOLIDATED EDISON        | INDIAN POINT 2    |
| 27754         | GFU                        | THREE MILE ISLAND |
| 28850         | NEW YORK POWER AUTHORITY   | INDIAN POINT 3    |
| 34020         | TVA                        | BELLEFONTE        |

## SPARES

|       |                                |                 |
|-------|--------------------------------|-----------------|
| D2080 | POOLED EQUIPMENT INVENTORY CO. | MEMPHIS , TENN. |
|-------|--------------------------------|-----------------|

APPENDIX

Nuclear Part Inspection Record :

PART NAME : COUPLING                      PART NUMBER : 108017A17  
DRAWING NUMBER : 108017A                  DRAWING REV.    C  
MFG/SUPPLIER : GIMPEL                    MFG. MODEL # : P2989-029  
D-R ACCEPTS 10CFR21: YES                VALVE SERIAL # 72-11372-1,2  
  
FUNCTION : T&T VALVE COMPONENT  
  
FUNCTION CLASS : MECHANICAL              3rd PARTY QUALIFICATION: NO  
   TECH. REQ. DWG:  
QUALIFICATION CLASS : ASSEMBLY  
  
CRITERIA : 10CFR50, APP.B/MNSOP 1.1.011  
  
QUALIFICATION MODE : TYPE TEST/SIMILARITY  
  
QUALIFIED PER : EL20753  
  
QUALITY CLASS : QPCG  
  
DEDICATION METHOD : 4                    MARKINGS/TRACEABLE MATERIAL: NO

Critical Characteristics :

A : VERIFY VENDOR PART/MODEL NUMBER  
B : RECORD .650 (REF.) BORE DIAMETER  
C : VERIFY 5/8-11 & 1/4-20 THREADS  
D : VERIFY SLOT 9/16" WIDE x 5/16" DEEP (REF.)  
E : RECORD OVERALL LENGTH (2 1/8" REF.)  
F : RECORD WIDTH (2 15/16" REF.)  
G : RECORD HEIGHT (2 1/4" REF.)  
H : VERIFY 1/4-20 THREADS ARE TAPPED THROUGH  
I : \*\* TAG PART TO STATE "AFTER FINAL ADJUSTMENT OF VALVE LOCATE & DRILL A  
J : 1/4 DIA. X 1/8 DEEP HOLE IN STEM FROM SET SCREW HOLE IN COUPLING ."

SHELFLIFE ITEM: NO  
TIME :

NUCLEAR ENGINEER : E. GRANDUSKY              DATE1: 8/11/94

QUALITY ASSURANCE : V. FUNK                  DATE2: 8/11/94

Nuclear Part Inspection Record :

|                                |                             |
|--------------------------------|-----------------------------|
| PART NAME : PILOT VALVE & STEM | PART NUMBER : 108017A16     |
| DRAWING NUMBER : 108017A       | DRAWING REV. C              |
| MFG/SUPPLIER : GIMPEL CORP.    | MFG. MODEL # : P2989-028    |
| D-R ACCEPTS 10CFR21: YES       | VALVE SERIAL # 72-11372-1,2 |

FUNCTION : T&T VALVE COMPONENT

FUNCTION CLASS : MECHANICAL                      3rd PARTY QUAL  
TECH. REQ.

QUALIFICATION CLASS : PART

CRITERIA : 10CFR50, APP.B/NNSOP 1.1.011

QUALIFICATION MODE : TYPE TEST SIMILARITY

QUALIFIED PER : EL20753

QUALITY CLASS : QPCG

DEDICATION METHOD : 4 MARKINGS/TRACEABLE MATERIAL : NO

Critical Characteristics :

A : RECORD ACTUAL 1.50 (REF.) DIA.  
B : RECORD ACTUAL .68 (REF.) DIA.  
C : RECORD OVERALL LENGTH - 17.75 (REF.) REQUIRED  
D : VERIFY VENDOR PART/MODEL NUMBER  
E : VERIFY 5/8-11 THREADS x 1 1/16" LONG  
F : VERIFY .687 (REF.) THRU HOLE & .937 (REF.) DI  
G : VERIFY 5.375 (REF.) DIMENSION  
H : VERIFY 9/16" SQUARE x 15/32" (REF.) DIMENSION  
I : \*\* TAG PART TO STATE "AFTER FINAL ADJUSTMENT OF VALVE LOCATE & DRILL A  
J : 1/4 DIA. X 1/8 DEEP HOLE IN STEM FROM SET SCREW HOLE IN COUPLING ."

SHEFLIFE ITEM: NO  
TIME :

NUCLEAR ENGINEER : E. GRANDUSKY

DATE1: 8/11/94

QUALITY ASSURANCE : V. FUNK

DATE2: 8/11/94

Nuclear Part Inspection Record :

PART NAME : T&T VALVE ASSEMBLY                      PART NUMBER : 890196A01  
DRAWING NUMBER : 890196A                      DRAWING REV. 00  
MFG/SUPPLIER : GIMPEL                      MFG. MODEL # : NP2236  
D-R ACCEPTS 10CFR21: YES                      VALVE SERIAL # 87-14818-1,2

FUNCTION : T&T VALVE ASS'Y, 4"-900 LBS.

FUNCTION CLASS : MECHANICAL                      3rd PARTY QUAL  
TECH. REQ.

QUALIFICATION CLASS : ASSEMBLY

CRITERIA : 10CFR50, APP.B/WNSOP 1.1.011

QUALIFICATION MODE : TYPE TEST SIMILARITY

QUALIFIED PER : EL20458

QUALITY CLASS : QPCG

DEDICATION METHOD : 1 or 7                      MARKINGS/TRACEABLE MATERIAL : YES

Critical Characteristics :

- A : VERIFY VALVE SERIAL NUMBER MARKED ON T&T ASS'Y
- B : VERIFY VALVE BODY HEAT NUMBER MARKED ON PART - RECORD NO.
- C : VERIFY BONNET (COVER) HT # MARKED ON PART - RECORD NO.
- D : VERIFY TRIP LATCH LEVER MODIFIED PER DWG. 800473A
- E : VERIFY TRIP LATCH SPRING IS P/N 105594A10
- F : VERIFY DRESSER-RAND PART NUMBER STAMPED ON ASS'Y
- G : VERIFY LIMITORQUE SERIAL NUMBER IS L397105 & L397109
- H : RECORD CRITICAL DIMS. PER GIMPEL DWG NP2236 (SEE QA or ENG. FOR DWG)
- I : VERIFY "PULL" TYPE TROMBETA SOLENOID G206 INCLUDED IN ASS'Y
- J : VERIFY CONTACT OF COUPLING SET SCREW TO "SPOT" ON VALVE STEM

SHELFLIFE ITEM: NO  
TIME :

NUCLEAR ENGINEER : E. GRANDUSKY

DATE1:8/11/94

QUALITY ASSURANCE : V. FUNK

DATE2:8/11/94