

**LG&E Energy LLC**  
220 West Main Street (40202)  
P.O. Box 32030  
Louisville, Kentucky 40232

March 22, 2006

Elizabeth O'Donnell  
Executive Director  
Kentucky Public Service Commission  
211 Sower Boulevard  
Frankfort, Kentucky 40602-0615

RECEIVED

MAR 23 2006

PUBLIC SERVICE  
COMMISSION

**RE: AN EXAMINATION OF THE APPLICATION OF THE FUEL  
ADJUSTMENT CLAUSE OF KENTUCKY UTILITIES COMPANY  
FROM MAY 1, 2005 THROUGH OCTOBER 31, 2005  
CASE NO. 2005-00496**

Dear Ms. O'Donnell:

As requested at the hearing on March 16, 2006, enclosed please find a copy of the presentation made at the meeting with Commission Staff members and Kentucky Utilities Company ("KU") on July 1, 2005. The purpose of the meeting was to discuss the operational issues associated with KU's E. W. Brown units 8-11. In attendance at the meeting for the Commission Staff were Mr. Robert Amato, and Mr. Jim Welch. In attendance for KU were Mr. Kent Blake, Mr. John Malloy and Mr. Robert Conroy. In addition to the meeting, KU provided an updated repair schedule by e-mail correspondence to the above Commission Staff members on November 30, 2005. The correspondence and repair schedule are also enclosed.

Please contact me if you have any questions.

Sincerely,



Robert M. Conroy  
Manager, Rates

Enclosures

**E.W. Brown**  
**Units 8,9,10,11**  
**Alstom GT11N2**  
**CIB 20050511**

*PSC Overview*

# **E.W.Brown**

## **Units 8,9,10, and 11**

- Alstom GT11N2 Simple Cycle Combustion Turbines
- Units commissioned:

Unit 8	02/14/1995
Unit 9	08/09/1994
Unit 10	12/22/1995
Unit 11	05/08/1996
- Each unit provides a gross summer capacity of 125 megawatts or 500 megawatts combined
- Fleet role is to provide generation to meet peak periods and serve as adequate reserve margin capacity

# **Alstom Inspection Criteria**

*Inspection / overhaul schedules occur in 6,000 equivalent operating hour (EOH) intervals in the following sequence:*

## **Alstom Recommended Maintenance Schedule**

<u>EOH Interval</u>	<u>Maintenance</u>
6,000 EOH	A inspection
12,000 EOH	A inspection
18,000 EOH	B inspection
24,000 EOH	C inspection / overhaul

# Maintenance History

UNIT	COMMERCIAL		CONVERSION		8000 COMM. EOH		LAST A INSPECTION		CURRENT	
	DATE	EOH	DATE	EOH	DATE	EOH	DATE	EOH	DATE	EOH
8	2/14/95	5728	11/2/97	6537	12/2/00	13728	10/1/01	16530	5/26/05	20683
9	8/9/94	4537	2/6/98	5584	11/6/00	12537	11/25/00	12568	5/26/05	17716
10	12/22/95	1412	3/1/97	3309	8/26/99	9412	10/12/01	14486	5/26/05	17991
11	5/8/96	909	10/18/98	8860	4/9/01	8909	10/12/01	9620	5/26/05	12548

Completed more "A" inspections than recommended by Alstom due to hot gas casing issues and combustor design problems. The "Conversion" date indicates the timing of the hot gas casing upgrade.

# **Alstom**

## **Customer Information Bulletin**

- Issued on May 11, 2005
- Recommends boroscope inspection prior to next run and immediately report findings
- KU management removes units from service  
*(removed from MISO dispatch)*

# CUSTOMER INFORMATION BULLETIN

## CIB 20050511 GT11N2

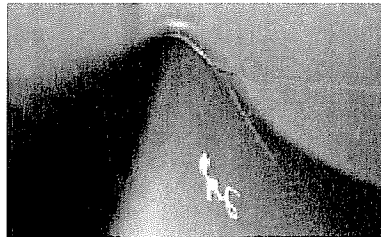
Issue: 05-05-11

Page 1 of 1

<b>Editor:</b> Stefano Tartoni <b>Phone:</b> +41-56-205 72 74 <b>Fax:</b> +41-56-205 72 13	<b>Subject:</b> <b>GT11N2 Turbine Vane 4 Finding</b>
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This Customer Information Bulletin (CIB) serves as information to ALSTOM Power GT11N2-Customers regarding a row 4 vane finding detected recently in a GT11N2 – 1VGV unit during a scheduled outage.

During disassembly on May 6, 2005 a displaced vane of row 4 was found. Visual inspection revealed a crack around the leading edge propagating towards the airfoil pressure side.



Crack

The component in question has accumulated 3'831 OH, 631 starts and 17'271 EOH.

While the vane 4 version in question has since been replaced by a revised row 4 version, it is still installed in five units at two GT11N2 plants in the United States. The two customers that have this particular version installed in their units have been contacted by their Customer Service Manager.

The revised row 4 vane design was introduced to the fleet in 1999 and is the current standard for the GT11N2 fleet.

#### Recommendations :

- ALSTOM recommends to boroscope inspect the five units concerned prior to the next run and to immediately report the findings to ALSTOM
- ALSTOM further recommends implementing the current row 4 vane design as soon as possible

If you should have any questions regarding this CIB, please contact your Customer Service Manager or Project Manager.

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**ALSTOM**

**Power**  
Customer Service

Gas Turbine and Combined Cycle Power Plants  
P O Box CH-5401 Baden, Switzerland

# E.W. Brown CT8

## Alstom Initial Boroscope Inspection

### CT8

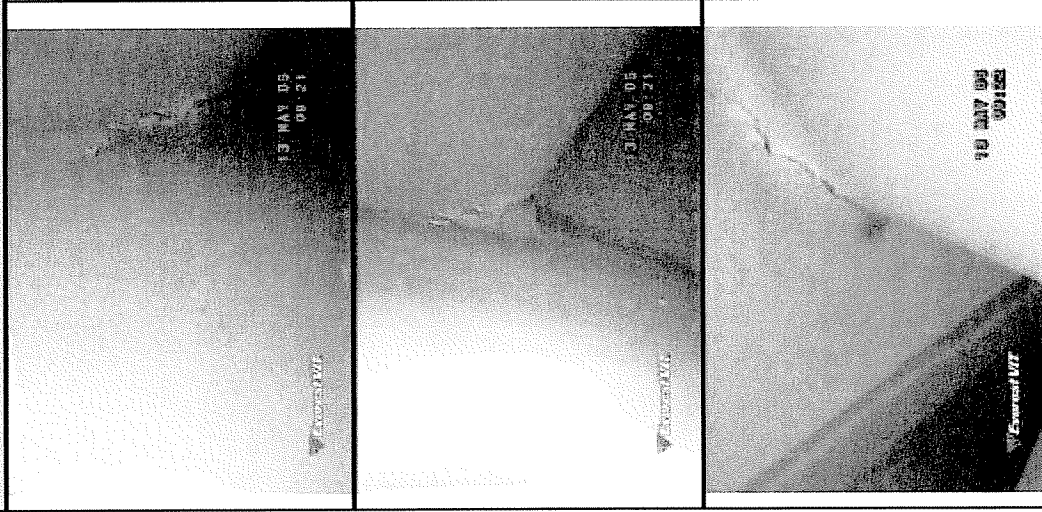
Air foil #48. (1 O'clock Position in the flow direction)

Crack on leading edge between route fillet and air foil.

Crack is propagated and spreading apart.

Cracks are visible to the naked eye and the material is splitting at the crack.

Failure is considered imminent by ALSTOM.

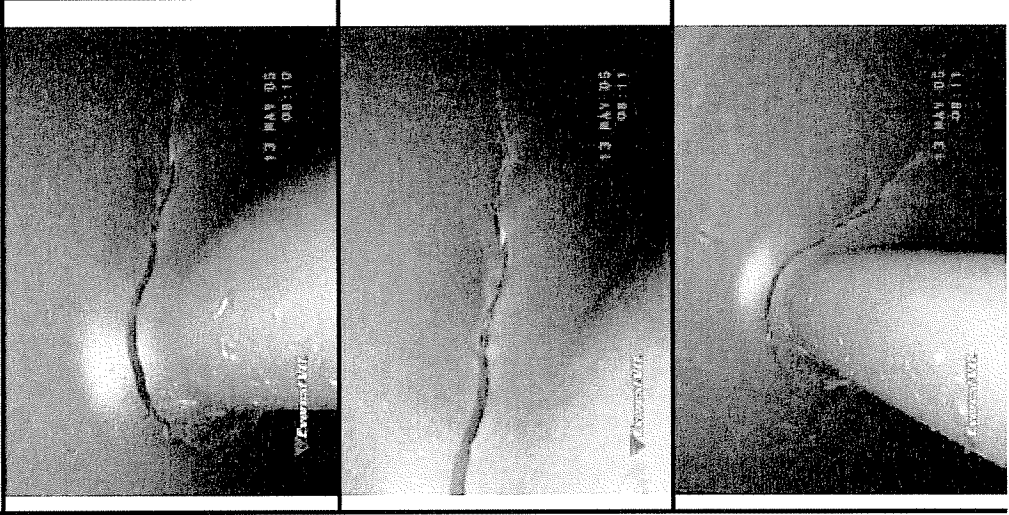




# E.W. Brown CT9

## Alstom Initial Boroscope Inspection

### CT9

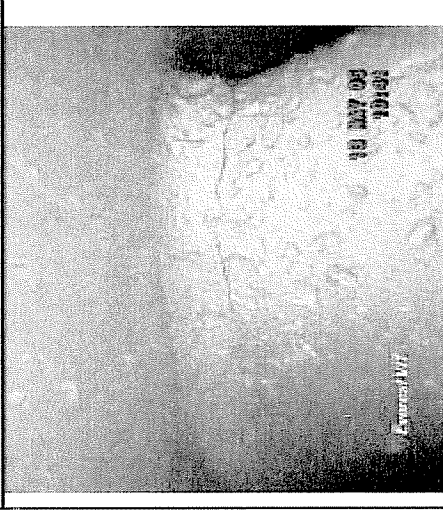


Air foil #48. (1 O'clock Position in the flow direction)  
Crack on leading edge between route fillet and air foil.  
Crack is propagated and spreading apart.  
Cracks are visible to the naked eye and the material is splitting at the crack.  
Failure is considered imminent by ALSTOM.

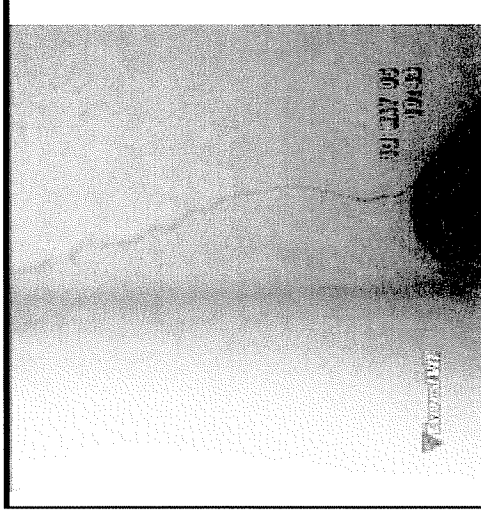
# E.W. Brown CT10

## Alstom Initial Boroscope Inspection

### CT10

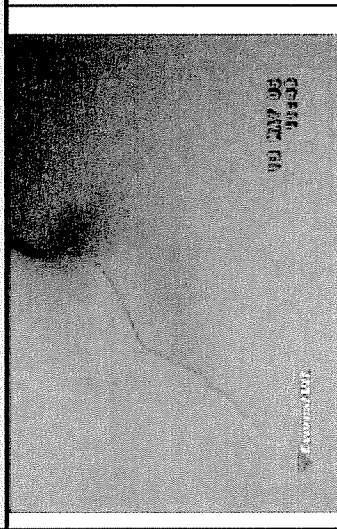
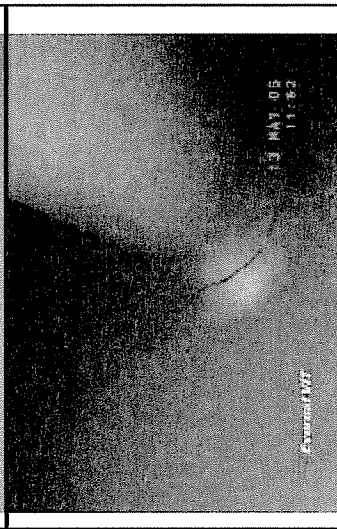


Air foil #49. (1 O'clock Position in the flow direction)  
Crack on leading edge between route fillet and air foil.  
Crack is propagated but is not spreading.  
Slightly less damage than CT8 and CT9.  
Cracks are visible to the naked eye but the material is not splitting.



# E.W. Brown CT11

## Alstom Initial Boroscope Inspection

<i>CT11</i>	
	<p>Air foil #50. (1 O'clock Position in the flow direction) Crack on leading edge between route fillet and air foil. Crack is propagated but is not spreading. Cracks are visible to the naked eye but the material is not splitting. This unit displays the least amount of damage.</p>
	

# Corrective Action

- Alstom recommends immediate replacement of all 4 units row-4 vane prior to returning the units to service
- Repair time per unit 30 days (sequential)

# Management Plan for Units

- Evaluation of Alstom recommended repair
- Engineering assessment of the new vane material  
*(Will this material resolve existing problem and provide long term reliability?)*
- Evaluate availability of parts / labor
- Determine project timeline

## Elzy, Tammy

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**From:** Blake, Kent  
**Sent:** Wednesday, November 30, 2005 5:33 PM  
**To:** 'roberta.amato@ky.gov'; 'jamesa.welch@ky.gov'  
**Cc:** Malloy, John  
**Subject:** E.W. Brown 11N2s

**Attachments:** EWBrown 11N2 Repair Schedule.ppt

Bob, Jim:

Just wanted to follow up with you on the status of the 11N2 CTs at our Brown Generating Station that we discussed with you at the beginning of July. We completed our evaluation of Alstom's recommended repairs, as well as our engineering assessment of the new vane material. The engineering assessment of the new design concluded that the parts should attain their advertised life (48,000 EOH) when utilized in a peaking capacity. As a result, we negotiated an agreement on the repairs with Alstom. That agreement was executed on November 17th. We expect all four units to be back in service and available in time for the summer of 2006. Attached is the current repair schedule which demonstrates how we anticipate staging the four units back into service. If you have any questions or require anything further, please do not hesitate to contact John or myself.

Kent



EWBrown 11N2  
Repair Schedule.p...

# Repair Schedule

