

December 2, 2002  
G9704-SSG-014

DOCUMENT CONTROL DESK  
UNITED STATES NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555



Reference: a) Boeing Letter G-1151-RSO-92-365 dated August 31, 1992; R.S. Orr to the NRC Operations Center  
b) NRC Letter Docket No. 99901227 dated August 12, 1992; L. J. Norrholm to R. S. Orr; Subject: Response to 10 CFR 21 Inquiry

Dear Sir or Madam:

In accordance with the Reference correspondence and 10 CFR 21, Boeing is sending the NRC the attached error notices received from our former software suppliers. Because of unknown current addresses, the following former customers were not notified:

Reactor Controls, Inc  
Echo Energy Consultants  
Nuclear Applications and Systems Analysis Company (Japan)  
Nuclear Power Services  
GPU Nuclear Corporation  
Tenera, Inc.  
Stone & Webster Engineering

Error notices have been sent to our other former customers.

Very truly yours,

A handwritten signature in black ink that reads "Mark S. Snyder". The signature is written in a cursive style with a long horizontal line extending to the right.

Mark S. Snyder  
Nuclear Administrator  
Mail Code 7A-43

Enclosures: GT STRUDL Program Report Forms 2002.06 through 2002.09

IE20

# GTSTRUDL Program Report Form

GPRF No.: 2002.06

DATE: 9/30/2002

FROM: Computer-Aided Structural Engineering Center  
Georgia Institute of Technology  
Atlanta, Georgia 30332-0355

## SEVERITY LEVEL:

- URGENT** Problem results in incorrect answers which may not be apparent or job aborts and cannot be recovered within the session or job.
- SERIOUS** Problem results in incorrect answers which are obvious or problem prevents completion of a particular user's task.
- MINOR** Problem can be worked around or problem poses high frustration factor.
- INFORMATIVE** Documentation error, program usage tip, user inconveniences.

Date Problem Confirmed September 18, 2002

Date Notification Sent 10/3/02

Computers All

Operating System All

Version All

Target Release for Correction Version 27.0

*Michael H. Swanger* <sup>KSW</sup>  
Signature  
R & D Division

Michael H. Swanger  
Typed or Printed Name

Sr. RE  
Title

9/30/2002  
Date of Signature

*David C. Key*  
Signature  
Professional Services Division

David C. Key  
Typed or Printed Name

Configuration Control Manager  
Title

10/3/02  
Date of Signature

# GTSTRUDL Program Report Form

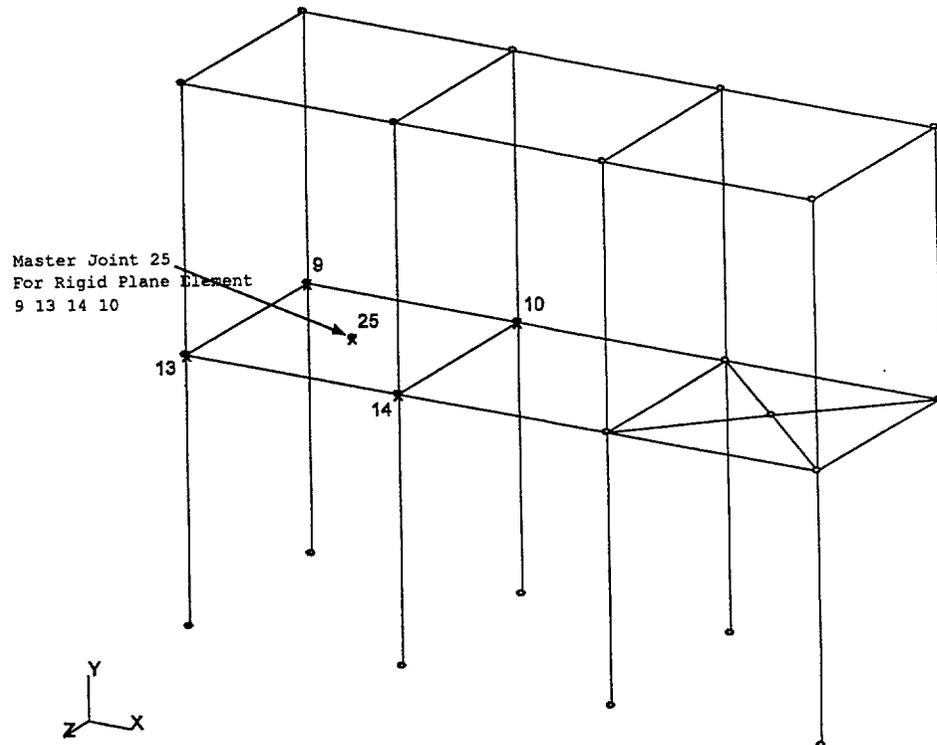
(Continued)

GPRF No.: 2002.06

DATE: 9/30/2002

## DESCRIPTION:

The output from the LIST TRANSIENT MAXIMUM command is incorrect for planar master joints. A planar master joint is a master joint for a rigid plane, plate, or pin element that also has no other incident members or elements. Such a master joint would be free-floating if a rigid body of the indicated type were not connected to it. Such a joint is illustrated as joint 25 in the figure below. One work-around is to use a rigid solid element with appropriate slave releases as a substitute for the rigid plane, plate, or pin element. This will preclude the reduction of the master joint to planar status. Another work-around is to connect the master joint to one of its slave joints with a frame member having negligible stiffness and mass.



## GTSTRUDL User Reference Manual Sections:

Output of Transient Results

Section 2.4.6.5, Volume 3, GTSTRUDL Reference Manual, Revision J.

# GTSTRUDL Program Report Form

GPRF No.: 2002.07

DATE: 10/29/2002

FROM: Computer-Aided Structural Engineering Center  
Georgia Institute of Technology  
Atlanta, Georgia 30332-0355

## SEVERITY LEVEL:

- URGENT Problem results in incorrect answers which may not be apparent or job aborts and cannot be recovered within the session or job.
- SERIOUS Problem results in incorrect answers which are obvious or problem prevents completion of a particular user's task.
- MINOR Problem can be worked around or problem poses high frustration factor.
- INFORMATIVE Documentation error, program usage tip, user inconveniences.

Date Problem Confirmed October 28, 2002

Date Notification Sent 10/29/02

Computers All

Operating System All

Version All

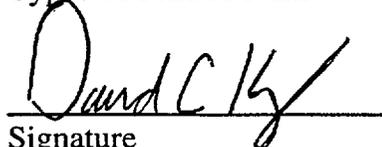
Target Release for Correction Version 27.0

  
Signature  
R & D Division

Sr. RE  
Title

Michael H. Swanger  
Typed or Printed Name

10/29/02  
Date of Signature

  
Signature  
Professional Services Division

Configuration Control Manager  
Title

David C. Key  
Typed or Printed Name

10/29/02  
Date of Signature

**GTSTRUDL Program Report Form**  
(Continued)

GPRF No.: 2002.07

DATE: 10/29/2002

**DESCRIPTION:**

Nonlinear analysis aborts when variable members and cable elements are in used in the same model. The best work-around is to substitute individual prismatic members for each segment in each member having variable member properties. Nonlinear analysis is executed by the NONLINEAR ANALYSIS (CONTINUE), PERFORM CABLE PRESTRESS, and PERFORM PUSHOVER ANALYSIS commands.

**GTSTRUDL User Reference Manual Sections:**

Nonlinear Static Analysis    Section 2.5, Volume 3, GTSTRUDL Reference Manual,  
Revision J.

Nonlinear Analysis of Cable Structures  
Section 2.6.3, Volume 3, GTSTRUDL Reference Manual,  
Revision J.

# GTSTRUDL Program Report Form

GPRF No.: 2002.08

DATE: 11/1/2002

FROM: Computer-Aided Structural Engineering Center  
Georgia Institute of Technology  
Atlanta, Georgia 30332-0355

## SEVERITY LEVEL:

- URGENT** Problem results in incorrect answers which may not be apparent or job aborts and cannot be recovered within the session or job.
- SERIOUS** Problem results in incorrect answers which are obvious or problem prevents completion of a particular user's task.
- MINOR** Problem can be worked around or problem poses high frustration factor.
- INFORMATIVE** Documentation error, program usage tip, user inconveniences.

Date Problem Confirmed November 1, 2002

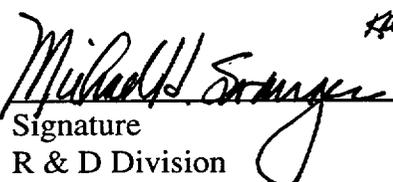
Date Notification Sent 11/1/02

Computers All

Operating System All

Version All

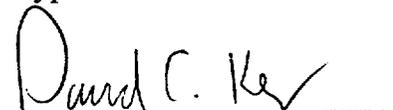
Target Release for Correction Version 27.0

  
Signature  
R & D Division

Sr. RE  
Title

Michael H. Swanger  
Typed or Printed Name

11/1/02  
Date of Signature

  
Signature  
Professional Services Division

Configuration Control Manager  
Title

David C. Key  
Typed or Printed Name

11/1/02  
Date of Signature

**GTSTRUDL Program Report Form**  
(Continued)

GPRF No.: 2002.08

DATE: 11/1/2002

**DESCRIPTION:**

The global mass matrix have errors for the relevant rotational degrees of freedom at master joints under the following conditions:

1. The master joint is a master joint of a rigid pin element (TYPE RIGID PIN). Other joint constraints are not affected.
2. The master joint has any type of member or element other than space frame or SBHQ6 connected to it.
3. A corresponding slave node has joint inertia specified by the INERTIA OF JOINTS WEIGHT/MASS command.

The best work-around is to replace the rigid pin element by a rigid solid element with an appropriate slave release.

**GTSTRUDL User Reference Manual Sections:**

Joint Constraints – Rigid Bodies and Joint Ties

Section 2.6.5, Volume 3, GTSTRUDL Reference Manual,  
Revision R.

# GTSTRUDL Program Report Form

GPRF No.: 2002.09

DATE: 11/1/2002

FROM: Computer-Aided Structural Engineering Center  
Georgia Institute of Technology  
Atlanta, Georgia 30332-0355

## SEVERITY LEVEL:

- URGENT** Problem results in incorrect answers which may not be apparent or job aborts and cannot be recovered within the session or job.
- SERIOUS** Problem results in incorrect answers which are obvious or problem prevents completion of a particular user's task.
- MINOR** Problem can be worked around or problem poses high frustration factor.
- INFORMATIVE** Documentation error, program usage tip, user inconveniences.

Date Problem Confirmed November 1, 2002

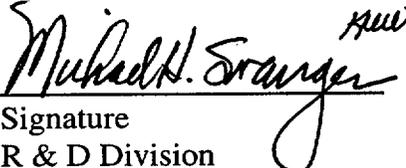
Date Notification Sent 11/1/02

Computers All

Operating System All

Version All

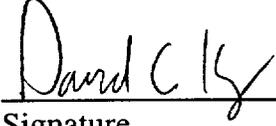
Target Release for Correction Version 27.0

  
Signature  
R & D Division

Sr. RE  
Title

Michael H. Swanger  
Typed or Printed Name

10/1/02  
Date of Signature

  
Signature  
Professional Services Division

Configuration Control Manager  
Title

David C. Key  
Typed or Printed Name

11/1/02  
Date of Signature

**GTSTRUDL Program Report Form**  
(Continued)

GPRF No.: 2002.09

DATE: 11/1/2002

**DESCRIPTION:**

The **NONLINEAR ANALYSIS CONTINUE** command will abort if new joints, members, and finite elements are added to the structure prior to giving the command. A work-around is to use the following procedure:

1. Define the entire structure prior to the first analysis execution, including the joints, members, and finite elements that are inactive for part of the analysis process.
2. Prior to starting the sequence of **NONLINEAR ANALYSIS** and **NONLINEAR ANALYSIS CONTINUE** commands, inactivate the joints, members, and finite elements that should not take part in the solution. Use the **INACTIVE** command to accomplish this.
3. Prior to giving the **NONLINEAR ANALYSIS** command to execute the analysis during which certain inactive joints, members, and finite elements are to participate, use the **ACTIVE** command to activate those joints, members, and elements.

This error report also applies to **NONLINEAR ANALYSIS CONTINUE** commands that follow a **PERFORM CABLE PRESTRESS ANALYSIS** command.

**GTSTRUDL User Reference Manual Sections:**

Nonlinear Static Analysis    Section 2.5, Volume 3, GTSTRUDL Reference Manual,  
Revision R.

Nonlinear Analysis of Cable Structures  
Section 2.6.3, Volume 3, GTSTRUDL Reference Manual,  
Revision R.

**ACTIVE/INACTIVE** Structure Specification  
Section 2.1.3.4, Volume 1, GTSTRUSL Reference  
Manual, Revision R.