

July 1, 2004
9704-PFS-017

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
Raytheon Engineers & Constructors

Error notices have been sent to our other former customers.

Please note that Mark Snyder has taken another position and the undersigned has assumed the role of Nuclear Administrator for Boeing.

Very truly yours,



Pat Soroe
Nuclear Administrator
Mail Code 7A-XT

Enclosures: GT STRUDL Program Report Forms 2004.1 through 2004.9

JE09



GTSTRUDL Program Report Form

GPRF No.: 2004.1

DATE: 1/26/04

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 January 26, 2004

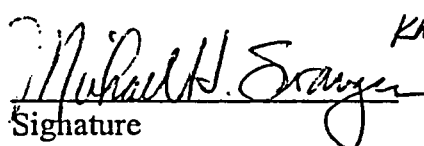
Date Notification Sent 1/26/04

Computers All

Operating System All

Version All

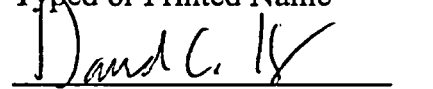
Target Release for Correction Version 28.0


Signature
R & D Division

Sr. RE
Title

Michael H. Swanger
Typed or Printed Name

1/26/04
Date of Signature


Signature
Professional Services Division

Configuration Control Manager
Title

David C. Key
Typed or Printed Name

1/26/04
Date of Signature

GTSTRUDL Program Report Form
(Continued)

GPRF No.: 2004.1

DATE: 1/26/04

DESCRIPTION:

Linear buckling analysis will abort if one or more dynamic loads are among the list of active loads. If dynamic loads are among the defined loading conditions, the work-around is to specify the LOAD LIST command without naming any dynamic loads prior to executing the PERFORM LINEAR BUCKLING ANALYSIS command.

GTSTRUDL User Reference Manual Sections:

The PERFORM LINEAR
BUCKLING ANALYSIS Command

Section 2.8, Volume 3, Rev. R,
GTSTRUDL Reference Manual

GTSTRUDL Program Report Form

GPRF No.: 2004.2

DATE: 2/2/04

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 2/2/04

Date Notification Sent 2/2/04

Computers All

Operating System All

Version All versions prior to Version 28.0 (versions released prior to 2004)

Kenneth M. Will
Signature
R & D Division

Kenneth M. Will
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David C. Key
Signature
Professional Services Division

David C. Key
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Ducite
Title

2/2/04
Date of Signature

Configuration Control Manager
Title

2/2/04
Date of Signature

GTSTRUDL Program Report Form
(Continued)

GPRF No.: 2004.2

DATE: 2/2/04

DESCRIPTION:

When the following is done in the Scope Environment, an incorrect display of contouring results (stresses, resultants, etc) may be produced:

- (1) A window on a 3-D structure is created.
- (2) The window is rotated (not a planar view)
- (3) A contour (stress, resultants, etc) for the window is displayed.

Workaround:

If all of the elements are in a common plane, display a plan view of the window. You can also use the CONTOUR command with plane specs to create a window of a plane in the model.

In addition, you can use GTMenu to create a view of a plane of the model and then display the contours.

Applicable Section of the Documentation:

Please note that the Scope Environment was removed from the documentation with the release of Version 26 and Revision R of the GTSTRUDL Reference Manuals as the Scope Environment is no longer under development.

In previous revisions of the Reference Manual, the Contour command for the Scope Environment was found in Section 2.7.6.14.4 of Volume 3.

GTSTRUDL Program Report Form

GPRF No.: 2004.3

DATE: 2/4/04

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 February 3, 2004

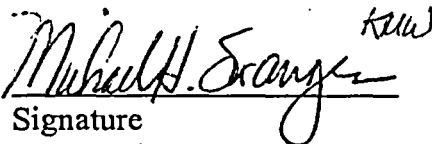
Date Notification Sent 2/4/04

Computers All

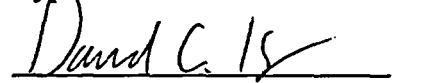
Operating System All

Version All

Target Release for Correction Version 28.0


Signature
R & D Division

Michael H. Swanger
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Signature
Professional Services Division

David C. Key
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Sr. RE
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2/3/04
Date of Signature

Configuration Control Manager
Title

2/4/04
Date of Signature

GTSTRUDL Program Report Form
(Continued)

GPRF No.: 2004.3

DATE: 2/4/04

DESCRIPTION:

The NONLINEAR ANALYSIS command may abort when nonlinear spring elements are present in the model and all joints are fully fixed supports. The work-around is to make certain the model is correct.

GTSTRUDL User Reference Manual Sections:

Nonlinear Spring Element

Section 2.5.3, Volume 3, Rev. R,
GTSTRUDL Reference Manual

NONLINEAR ANALYSIS Command

Section 2.5.5, Volume 3, Rev. R,
GTSTRUDL Reference Manual

GTSTRUDL Program Report Form

GPRF No.: 2004.4

DATE: 2/19/04

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 February 18, 2004

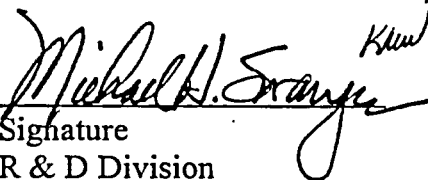
Date Notification Sent 2/19/04

Computers All

Operating System All

Version All

Target Release for Correction Version 28.0


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2/18/04
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Configuration Control Manager
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David C. Key
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2/19/04
Date of Signature

GTSTRUDL Program Report Form
(Continued)

GPRF No.: 2004.4

DATE: 2/19/04

DESCRIPTION:

When rigid bodies are DELETED, i.e. specified in DELETIONS mode, any slave joints of the deleted rigid bodies having only one incident member or element will be incorrectly marked INACTIVE. Any subsequent analysis (stiffness, dynamic, etc.) will then terminate with one or more error messages indicating that there is an active member or element incident on the subject inactive joints. Consider the following example:

```
{ 39} > TYPE RIGID PLANE
{ 40} > RIGID BODY INCIDENCES
{ 41} > 'RP1' 'M1' 5 TO 8   $ JOINT M1 IS THE MASTER JOINT; JOINTS 5 TO 8
{ 42} >                   $ ARE THE SLAVE JOINTS
{ 43} > 'RP2' 'M2' 9 TO 12  $ JOINT M2 IS THE MASTER JOINT; JOINTS 9 TO 12
{ 44} >                   $ ARE THE SLAVE JOINTS
.
.
.
{ 69} > DELETIONS
{ 70} > RIGID BODIES 'RP2'

**** INFO_STJMDL -- THE FOLLOWING JOINTS WERE MADE INACTIVE WHEN THE ABOVE MEMBERS WERE DELETED
                M2      9      10      11      12
{ 71} > ADDITIONS
```

Rigid body RP2 is defined by master joint M2 and slave joints 9 through 12 (lines 39 to 44), then subsequently deleted (lines 69 and 70). The printed message – **** INFO_STJMDL... – indicates that the master joint M2 and the slave joints 9, 10, 11, and 12 were marked inactive. The inactive status for joint M2 is valid because indeed, no other members are attached to this joint. However, slave joints 9 through 12 were erroneously marked inactive because only one non-rigid body member is incident on these joints (had there been two or more members attached to these joints, the joints would not have been marked inactive). A subsequent attempt to execute a STIFFNESS analysis produced the following error messages:

```
{ 74} > STIFFNESS

**** INFO_STCHCK -- THE FOLLOWING MASTER NODES HAVE INCIDENT RIGID PLANE,
                PLATE, OR PIN ELEMENTS ONLY AND HAVE BEEN CHANGED TO
                PLANAR STATUS:

                M1
**** ERROR_STCHCK -- MEMBER 5      IS INCIDENT ON INACTIVE JOINT 9      MEMBER IGNORED IN THIS
ANALYSIS
**** ERROR_STCHCK -- MEMBER 6      IS INCIDENT ON INACTIVE JOINT 10     MEMBER IGNORED IN THIS
ANALYSIS
**** ERROR_STCHCK -- MEMBER 7      IS INCIDENT ON INACTIVE JOINT 11     MEMBER IGNORED IN THIS
ANALYSIS
**** ERROR_STCHCK -- MEMBER 8      IS INCIDENT ON INACTIVE JOINT 12     MEMBER IGNORED IN THIS
```

ANALYSIS

**** WARN_STDSY1 -- SCAN mode is ON. Analysis will be halted.

Slave joints 9 through 12 should not have been marked inactive because at least one active member was attached to each joint.

One possible work-around is to re-activate the erroneously inactivated joints and delete and re-define the members that are indicated to be incident on the inactive joints:

ACTIVE JOINTS 9 TO 12

DELETIONS

MEMBERS 5 TO 8

ADDITIONS

TYPE SPACE FRAME

MEMBER INCIDENCES

5	5	9
6	6	10
7	7	11
8	8	12

GTSTRUDL User Reference Manual Sections:

Joint Constraints – Rigid Bodies and
Joint Ties

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

GTSTRUDL Program Report Form

GPRF No.: 2004.5

DATE: 3/4/04

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 March 3, 2004

Date Notification Sent 3/4/04

Computers All

Operating System All

Version All

Target Release for Correction Version 28.0

Michael H. Swanger ^{Knew}
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3/3/04
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Professional Services Division

Configuration Control Manager
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3/4/04
Date of Signature

GTSTRUDL Program Report Form
(Continued)

GPRF No.: 2004.5

DATE: 3/4/04

DESCRIPTION:

Static analysis will abort if member and/or element loads are applied to rigid bodies. The work-around is to remove any rigid body names from member and element lists in member and element load commands.

GTSTRUDL User Reference Manual Sections:

Joint Constraints – Rigid Bodies and
Joint Ties

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

GTSTRUDL Program Report Form

GPRF No.: 2004.6

DATE: 3/22/04

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 March 22, 2004

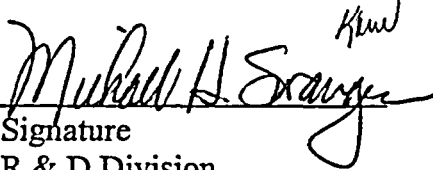
Date Notification Sent 3/22/04

Computers All

Operating System All

Version All

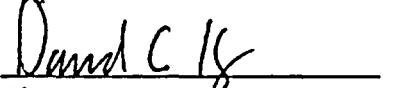
Target Release for Correction Version 28.0


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3/22/04
Date of Signature

GTSTRUDL Program Report Form
(Continued)

GPRF No.: 2004.6

DATE: 3/22/04

DESCRIPTION:

Nonlinear static analysis computes incorrect reactions under the following conditions:

1. The support is released and all released degrees of freedom are fully released. Elastic supports do not satisfy this condition.

2. A joint load is applied in one or more of the fully fixed degrees of freedom. Joint loads are applied by the JOINT LOAD command and the JOINTS option of the DEAD LOAD and SELF WEIGH commands. Note that the JOINTS option of the DEAD LOAD and SELF WEIGHT commands apply the joint loads automatically, which may not make this condition readily noticable.

The reaction components corresponding to the fully fixed degrees of freedom under these conditions do not include the addition of the applied joint load components. Other reaction components are correct.

GTSTRUDL User Reference Manual Sections:

NONLINEAR ANALYSIS Command	Section 2.5.5, Volume 3, Rev. R, GTSTRUDL Reference Manual
----------------------------	---

GTSTRUDL Program Report Form

GPRF No.: 2004.7

DATE: 3/22/04

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 March 22, 2004

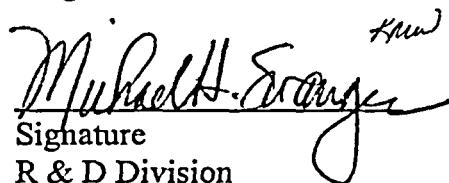
Date Notification Sent 3/22/04

Computers All

Operating System All

Version All

Target Release for Correction Version 28.0


Signature
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Sr. RE
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Michael H. Swanger
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3/22/04
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3/22/04
Date of Signature

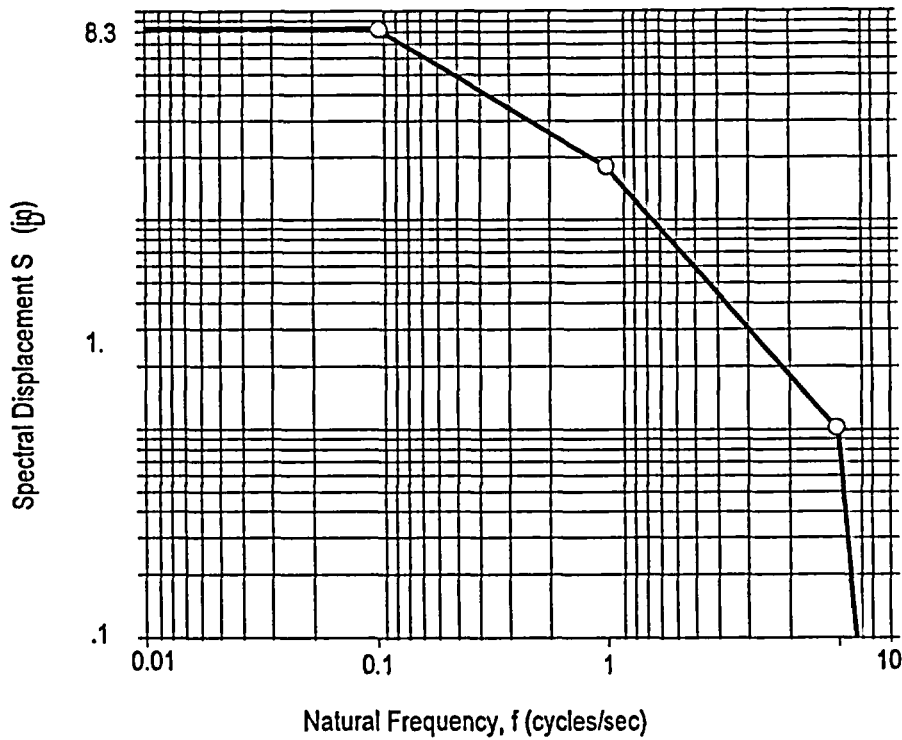
GTSTRUDL Program Report Form
(Continued)

GPRF No.: 2004.7

DATE: 3/22/04

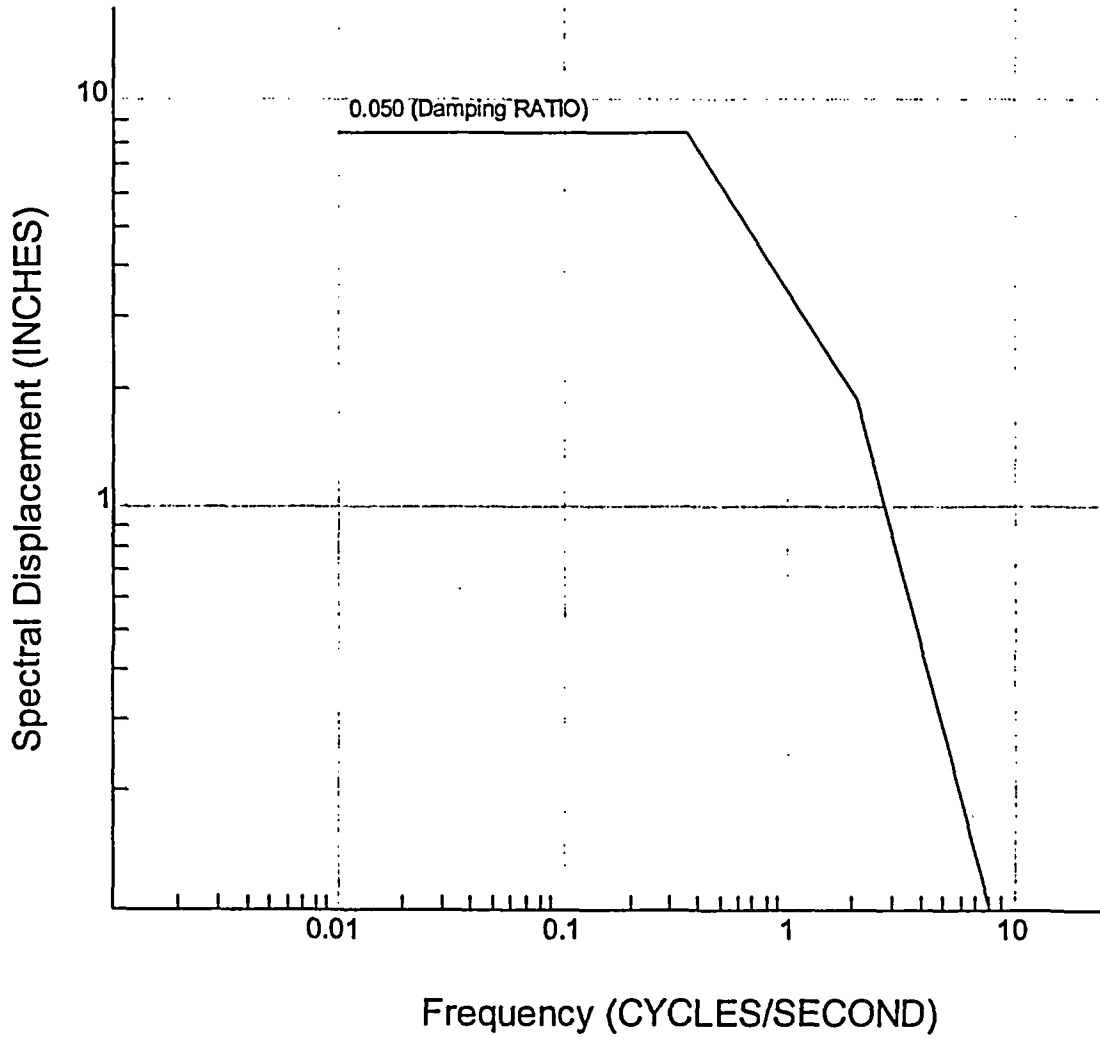
DESCRIPTION:

Figure 3.14-3, Section 3.14, GTSTRUDL Verification Manual, Volume 1, depicting an X-Y plot of response spectrum file EQUAKE, is incorrect. The incorrect figure is shown below, followed by a correct figure:



Incorrect Figure 3.14-3

Plot of Response Spectrum File 'EQUAKE'



Correct Figure 3.14-3

GTSTRUDL Program Report Form

GPRF No.: 2004.8

DATE: 4/9/04

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 April 6, 2004

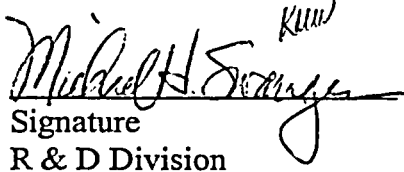
Date Notification Sent 4/9/04

Computers All

Operating System All

Version All

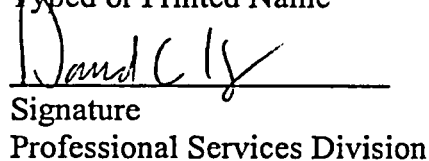
Target Release for Correction Version 28.0


Signature
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Sr. RE
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Michael H. Swanger
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4/6/04
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Professional Services Division

Configuration Control Manager
Title

David C. Kay
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4/9/04
Date of Signature

GTSTRUDL Program Report Form
(Continued)

GPRF No.: 2004.8

DATE: 4/9/04

DESCRIPTION:

GTSTRUDL analyses (stiffness analysis, dynamic analysis, etc.) will abort or indicate the presence of instabilities if the model contains a slave joint that is constrained by two or more different master joints. The abort is a floating point exception that produces no error message. Although Section 2.6.5.2.2, Volume 3 of the GTSTRUDL Reference Manual states that this condition shall not be modeled, no program consistency check is made to detect this condition and the abort/instabilites will occur. The work-around is to correct the model so that all slave joints have one and only one master joint.

GTSTRUDL Reference Manual Sections

RIGID BODY INCIDENCES Command

Section 2.6.5.2.2, Volume 3

GTSTRUDL Program Report Form

GPRF No.: 2004.9

DATE: 5/7/04

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 April 30, 2004

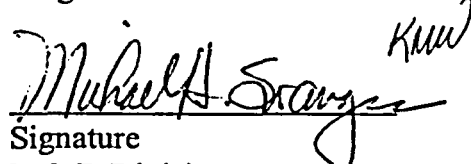
Date Notification Sent 5/7/04

Computers All

Operating System All

Version All

Target Release for Correction Version 28.0

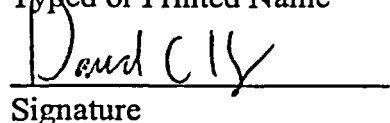

Signature

R & D Division

Sr. RE
Title

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4/30/04
Date of Signature


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Configuration Control Manager
Title

David C. Key
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5/7/04
Date of Signature

GTSTRUDL Program Report Form
(Continued)

GPRF No.: 2004.9

DATE: 5/7/04

DESCRIPTION:

The PILE ANALYSIS USING SUPERELEMENT command of the Offshore Analysis Module may abort. There is no known work-around.

GTSTRUDL Reference Manual Sections

PILE ANALYSIS USING
SUPERELEMENT Command

Section 6.4, Volume 8