CYGNA
ENERGY
SERVICES

101 California Street, Suite 1000, San Francisco, CA 94111-5894 415/397-5600

May 2, 1985
84042.38

Mrs. Juanita Ellis
President, CASE
1426 S. Polk
Dallas, Texas 75224

Subject: Communications Report Transmittal #16
Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 3
Texas Utilities Generating Company
Job. No. 84042

Dear Mrs. Ellis:

Enclosed for your information are additional Phase 3 communications reports. We have just finished reviewing our word processing file directory to ensure that all communications reports entered into the system have been issued. As a result, there are some relatively old communications reports in this transmittal.

If you have any questions or desire to discuss any of these documents, please do not hesitate to call.

Very truly yours,

N.H. Williams

N.H. Williams
Project Manager

Attachments

cc: Mr. J. Redding (TUGCO) w/attachments
Mr. S. Treby (USNRC) w/attachments
Ms. J. van Amerongen (TUGCO/EBASCO) w/attachments
Mr. S. Burwell (USNRC) w/attachments
Mr. W. Horin (Bishop, Liberman, et al.) w/attachments
Mr. D. Pigott (Orrick, Herrington & Sutcliffe) w/o attachments
Mr. V. Noonan (USNRC) w/o attachments
Mr. J. Beck (TUGCO) w/o attachments

ZZZZ
1/1 See Attached Dist

Communications Report

Company:	Texas Utilities	☒ Telecon	☐ Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 3	Job No.	84042/83090
		Date:	2/7/85
Subject:	Open Items	Time:	2:00 p.m.
		Place:	SFRO
Participants:	J. van Amerongen	of	TUGCO (EBASCO)
	L. Weingart		Cygna

Item	Comments	Required Action By
	Cygna committed to supplying the following: 1. Mass participation letter by 2/8/85. 2. Stability letter by 2/15/85. J. van Amerongen contacted I. Vogelsang regarding the grounding of the spent fuel pool cooling pump (reference Cygna Report TR-83090-01, Observation WD-07-01). This is being verified in the field and Cygna will be supplied with any available paperwork documenting the fix.	

Signed: N. H. Williams /ajb

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Communications Report

Company: Texas Utilities ☒ Telecon ☐ Conference Report

Project: Comanche Peak Steam Electric Station Independent Assessment Program - Phase 3

Job No: 83090/84042

Date: 1/8/85

Subject: NRC Questions for Phases 1 & 2 and Revisions to the Phase 3 Report

Time:

Place: SERO

Participants: J. van Amerongen of TUGCO (EBASCO)

D. Oldag Cygna

Item	Comments	Required Action By
	Ms. van Amerongen called to find out the status of the NRC Questions from Phases 1 and 2 and when the outstanding revisions to the Phase 3 report would be issued. Ms. Oldag told Jean that it was her understanding that Cygna letter 84042.022, dated January 18, 1985 addressed these questions. Ms. van Amerongen also said that after conferring with Ms. Williams, Ms. Oldag had said that the revisions to the Phase 3 report would be issued on January 18, 1985. Ms. Oldag told Ms. van Amerongen that they had not been issued on January 18, 1985 and that I would check on the status.	

Signed: T A Williams /ajb

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cc/Att: Russ, H. Hanstman, S. Ingby, J. Ellis, S. Burwell, Bechtel

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Communications Report

Company: Texas Utilities ☐ Telecon ☐ Conference Report

Project: Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 3

Job No. 83090/84042

Date: 1/17/85

Subject: Phase 1 & 2 Open Items

Time:

Place: SFRO

Participants:

	of
J. van Amerongen	TUGCO (EBASCO)
D. Oldag	Cygna

Item	Comments	Required Action By
	Ms. van Amerongen called and wanted to know when the open items from the Phase 1 and 2 reviews would be resolved. After conferring with Ms. Williams, Ms. Oldag returned her call and told Ms. van Amerongen that Cygna was preparing a letter that would answer her question and that this letter was to be issued by Friday, January 18, 1985.	

Signed: N. A. Williams

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Communications Report

Company: Texas Utilities ☒ Telecon ☐ Conference Report

Project: Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 3

Job No. 83090/84042

Date: 1/16/85

Subject: Mass Participation - Open Items

Time:

Place: SFRO

Participants: J. van Amerongen of TUGCO (EBASCO)

D. Oldag Cygna

Item	Comments	Required Action By
	Ms. van Amerongen called to find out when the mass participation issue would be resolved. After conferring with N. Williams, Ms. Oldag advised Ms. van Amerongen that Cygna was waiting for an answer from Gibbs & Hill so that the letter would not contain any open items.	

Signed: N A Williams

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Communications Report

Company: Texas Utilities ☒ Telecon ☐ Conference Report

Project: Comanche Peak Steam Electric Station
Independent Assessment Program - Phases 3 & 4

Job No. 84042/84056

Date: 12/27/84

Subject: Data Request

Time: 9:30 a.m.

Place: SFRO

Participants: J. van Amerongen of EBASCO (TUGCO)

L. Weingart Cygna

Item	Comments	Required Action By
	I requested the following data/information: 1. What are the four NCR categories defined in NPSI W.P. 15.01? (84042) 2. What procedure specifies that orifices will be sized in the field and checked during pre-op testing? (84056) 3. Mass participation, post processor output for the rerun with localized spectra of problem AB-1-66B. (84042) 4. GTN-47391 dated 7/1/80 with attachments. (84042)	

Signed: N H Williams /ajb

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Communications Report

Company: Texas Utilities ☒ Telecon ☐ Conference Report

Project: Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 3

Job No: 84042/84056

Date: 1/18/85

Subject: Outstanding Phase 3 Report Issues

Time:

Place: SFRO

Participants:

	of
J. van Amerongen	TUGCO (EBASCO)
D. Oldag	Cygna

Item	Comments	Required Action By
	Ms. van Amerongen called to find out what the tentative completion dates were for some outstanding issues, specifically the revisions to the Phase 3 report, the original issue of the Phase 4 report and the resolution of the mass participation issue. After conferring with Ms. Williams, Ms. Oldag advised Ms. van Amerongen that because of the work associated with the NRC meeting scheduled for January 10th, we had no basis to even estimate a completion date for these issues. Ms. van Amerongen stated that she needed completion dates for her status report to D. Wade so she was going to choose scheduled completion dates for these open issues. Ms. Oldag told her that she should be sure to state that these scheduled dates were chosen by her and that they were not based on any information Cygna had provided.	

Signed: N. H. Williams /ajb

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Communications Report

Company:	Texas Utilities	☒ Telecon	☐ Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 3	Job No.:	84042
		Date:	1/25/85
Subject:	Mass Participation Study	Time:	a.m.
		Place:	SFRO
Participants:	H. Mentel	of	Gibbs & Hill
	L. Weingart		Cygna

Item	Comments	Required Action By
	L. Weingart called H. Mentel to request the following additional information related to the mass participation study: 1. Clarification of the different nozzle loads at node 743 presented in problem AB-1-79F. There are three sets presented without any description of significance of each. 2. Calculation for the axial and shear loads at node 1 for problem AB-1-86A. L. Weingart also asked H. Mentel if there was any specific procedure or checklist which referenced the Bonney Forge publications for calculation of SIFs at weldolets and sweepolets.	

Signed: N H Williams /ajb

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Communications Report

Company: Texas Utilities ☒ Telecon ☐ Conference Report

Project: Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 3

Job No. 84042

Date: 2/4/85

Subject: Mass Participation

Time: 10:30 a.m.

Place: SFRO

Participants:

	of
H. Mentel	Gibbs & Hill
L. Weingart	Cygna

Item	Comments	Required Action By
	H. Mentel supplied the following list of problems originally run with refined spectra which were not rerun as part of the mass fraction reanalysis program. 1. 1-23B 2. 1-59A 3. 1-61E 4. 1-67U 5. 1-67X 6. 1-67Y 7. 1-77 8. 1-93A 9. 1-94 10. 2-61E 11. 2-63B	

Signed: N A Williams /ajb

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Communications Report

Company: Texas Utilities ☐ Telecon X ☐ Conference Report

Project: Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 3

Job No. 84042

Date: 2/5/85

Subject: Document Request

Time: 2:45 p.m.

Place: SERO

Participants: J. van Amerongen of TUGCO (EBASCO)

D. Oldag Cygna

Item	Comments	Required Action By
	D. Oldag telephone J. van Amerongen to request a copy of CASE Exhibit 669B. J. van Amerongen said that she would try to locate the exhibit and send it tomorrow.	

Signed: D H Williams

/ajb

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Communications Report

Company: Texas Utilities ☐ Telecon X ☐ Conference Report

Project: Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 3

Job No. 84042

Date: 2/4/85

Subject: Cygna Letter 84042.023
Box Frames with 0" Gap

Time: 10:30 a.m.

Place: SERO

Participants: J. Finneran of TUGCO

J. Minichiello, N. Williams Cygna

Item	Comments	Required Action By
	Regarding the box frame analysis questions in Cygna letter 84042.023, TUGCO wanted to know whether the analysis Cygna did for the ASLB hearings would answer the questions being asked on weld adequacy. Cygna explained that our analysis did not include pressure and exhibited high pipe/box frame interaction loads, although the temperatures assumed by Cygna are potentially conservative. In addition, Cygna did not check the welds. We felt that rather than relying on the ASLB analyses, it was more appropriate to comment on the methods employed in the Affidavit since they are generic to TUCGO's box frame analysis which includes additional support other than Cygna's scope. Regarding the TUGCO analysis, Cygna noted that the pipe temperature of 350°F may be quite conservative at this location in the RHR system. This support is located in a portion of the system which experiences a maximum flowing fluid temperature of ~ 250°F at any time. The 350°F appears only during RHR initiation at cooldown. For this transient, there is no flow in this portion of the line based on a review of the Gibbs & Hill and data in problem AB-1-69. Since this support is about 40 feet (measured along the pipe) from the tee at which the 350°F flow is introduced, the assumption of 350°F at the support is overly conservative.	

Signed: N A Williams /ajb

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Communications Report

Company: Texas Utilities ☐ Telecon X ☐ Conference Report

Project: Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 3

Job No. 84042

Date: 2/6/85

Subject: Mass Participation

Time:

Place: SERO

Participants: G. Krishnan of Gibbs & Hill/Site

L. Weingart of Cygna

Item	Comments	Required Action By

G. Krishnan provided the postprocessor results for Node 301, problem AB-1-61A:

		Maximum	Minimum
Upset	(AB)	+1341	-1341
	(New)	+3963	-1281
Emergency	(AB)	+1539	-1539
	(New)	+5040	-5040

Signed: W. F. Williams

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Communications Report

Company: Texas Utilities ☒ Telecon ☐ Conference Report

Project: Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 3

Job No. 84042

Date: 11/30/84

Subject: Mass Participation Review

Time: 3:00 p.m.

Place: New York

Participants:

	of
H. Mentel, S. Marano	Gibbs & Hill
L. J. Weingart	Cygna

Item	Comments	Required Action By
	I informed Gibbs & Hill that of the 32 problems which were reviewed by Cygna as a spot check of their mass participation study, two oversights were found in which an additional mass point between restraints was not included in the reanalysis. The two situations were identical in nature, i.e., a mass point missing between an anchor and the first downstream (or upstream) support. Although further review by Cygna and discussion with Gibbs & Hill indicates that there would not be any design impact, the two oversights out of 32 problems represented a statistical failure per Mil Standard 105D sampling plans.	

Signed: N. H. Williams /btb

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Communications Report

Company: Texas Utilities ☐ Telecon ☒ Conference Report

Project: Comanche Peak Steam Electric Station Independent Assessment Program - Phase 3

Job No.: 84042

Date: 11/30/84

Subject: Mass Participation Study Review Procedure

Time: 9:45 A.M.

Place: CPSES Site

Participants:

	of
D. Rencher	TUGCO
J. Minichiello	Cygna

Item	Comments	Required Action By
1.	For his scope, Mr. Rencher screened the loads and singled out those with insignificant percentage increases or insignificant loads, except Feedwater or Main Steam, which had little margin to begin with.	
2.	The engineers were then given the load sheets and hanger packages and directed to use their standard criteria. The engineers would then return the sheets, if acceptable, and any calculations would be kept with the package. If hangers were not acceptable, refined analysis would be done and the calculations filed with the package (support not revised). No supports were unacceptable after refinement.	
3.	The effect of three-sided welds/composite sections was not specifically looked at as part of this review.	
4.	The general process for handling anchors/gang hangers was to review the support package for load increase in each stress problem. If it could take the worst percentage increase overall from the first problem it was deemed O.K., until the remaining loads were received. If it could not take the percentage increase from the second problem, the anchor would be reviewed for the correct total new loads (i.e., the sum of 1 and 2). If it was unacceptable for the percentage increase in the first problem, it was held until all loads were received. Note that in checking, the percentage increase was applied to the total loads on the anchor/gang hanger, as applicable (i.e., loads from problems not being rerun were not increased).	

Signed: RA Williams

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Communications Report

Company: Texas Utilities ☐ Telecon ☒ Conference Report

Project: Comanche Peak Steam Electric Station Independent Assessment Program - Phase 3

Job No.: 84042

Date: 11/30/84

Subject: Mass Participation Study - Support RH-1-005-016-C42K

Time: 10:30 a.m.

Place: Site

Participants: D. Rencher, J. Finneran (of TUGCO); J. Minichiello (Cygna)

Item	Comments	Required Action By
	In reviewing this support for the new loads, Cygna noted that certain welds in the calculations dated 3/2/84 had a small margin to allowable. This support is a large gang hanger with three large bore supports (RH-1-005-016-C42K, - 018, and -019), six small bore supports, and three conduit supports. The large bore support loads increase as a result of the mass participation study, as do two small bore support loads. The review for the new loads provided no calculations to show the welds acceptable. At this point in time, Cygna did not find sufficient justification for:	
1.	The acceptability of the welds shown in the revision dated 3/2/84.	
2.	The use of a screening criteria (for the loads sheets) which does not look at each support. That is, in PSE scope, supports with less than 5% increases were not reviewed. In the NPSI scope, supports with small percentage increases or small loads were not reviewed.	
	Cygna emphasized that these were preliminary points only and would be combined with our other positions in a follow-up letter.	

Signed: N H Williams /rmk

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Communications Report

Company: Texas Utilities ☒ Telecon ☐ Conference Report

Project: Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 3

Job No: 84042

Date: 12/14/84

Subject: Mass Participation Study

Time: 2:15 p.m.

Place: SFRO

Participants:

	of
J. van Amerongen	EBASCO (TUGCO)
L. Weingart	Cygna

Item	Comments	Required Action By
	Mr. Weingart requested the following drawings: BRHL-CC-2-AB-004 BRHL-CC-2-AB-007 BRHL-CC-2-AB-008 BRHL-CC-1-AB-004 BRHL-CC-2-AB-017 BRHL-CC-2-AB-003 BRHL-CC-2-AB-022 BRHL-CC-2-AB-010 BRHL-CC-2-FB-004 BRHL-CC-2-AB-011 BRHL-CC-2-AB-027A	

Signed: N. H. Williams

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Communications Report

Company: Texas Utilities ☐ Telecon ☒ ☐ Conference Report

Project: Comanche Peak Steam Electric Station Independent Assessment Program - Phase 3

Job No. 84042

Date: 12/13/84

Subject: Mass Participation Study

Time: 10:30 a.m.

Place: SERO

Participants: H. Mentel of Gibbs & Hill

L. Weingart Cygna

Item	Comments	Required Action By
	Mr. Mentel informed Mr. Weingart that all welded attachments on lines subject to steam/water hammer loads were evaluated considering the increased support loads due to the reanalyses. These were considered to be the most highly loaded attachments due to the large number of trunnions and axial restraints required for the steam/water hammer loads. Mr. Mentel will send Cygna the three page instruction for the local stress evaluations as well as the summary checklists which were completed. Gibbs & Hill did not evaluate the effects of increased stresses in break exclusion zones. Mr. Mentel suggested that while he is on vacation, Mr. Y. Chang (x5214) be contacted for any technical information regarding the mass participation study.	

Signed: W. H. Williams

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Communications Report

Company: Texas Utilities ☒ Telecon ☐ Conference Report

Project: Comanche Peak Steam Electric Station Independent Assessment Program - Phase 3

Job No.: 84042

Date: 12/12/84

Subject: Mass Participation Study

Time: 11:00 a.m.

Place: SERO

Participants:

	of
H. Mentel	Gibbs & Hill
L. Weingart	Cygna

Item	Comments	Required Action By

I called Mr. Mentel for clarification and/or additional information concerning the nozzle load summaries transmitted by Mr. Krishnan on 11/28/84.

(1) AB-1-66B, Nodes 1671 & 1611

Analysis was rerun with localized ARS to alleviate nozzle overloads. Cygna requested BRHL drawings and a description of which spectra were deleted in the rerun.

(2) AB-1-67V, Nodes 1105 & 4683

Load summaries do not match post processor output.

(3) AB-1-79F, Node 743

No post processor output attached.

(4) AB-1-86A, Node 1

Load summary does not match post processor output.

(5) AB-1-B5D, Node 1430

Load summary does not match post processor output.

Mr. Mentel stated that he would contact the site and send the necessary information out by the end of the week.

Signed: N. H. Williams /ajb

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Communications Report

Company: Texas Utilities ☐ Telecon ☒ Conference Report

Project: Comanche Peak Steam Electric Station Independent Assessment Program - Phase 3

Job No: 84042

Date: 11/27/84

Subject: Mass Participation Review

Time: 8:30 A.M.

Place: CPSES Site

Participants:

	of
J. Finneran, P. Chang, J. Ryan	TUGCO
H. Harrison, M. Chamberlain	TUGCO
J. Minichiello, G. MacKenzie	Cygna

Item	Comments	Required Action By
	Cygna explained that the purpose of the review was to determine the effect of mass participation reanalysis on supports. Mr. Finneran stated that Cygna should work with Mr. Harrison for any needed data or supports. Mr. Finneran also explained that the support review was not fully completed. As part of the effort, Cygna explained they would also review the supports for AB-1-23B and -23D, which had the bumper restraints. Mr. Finneran suggested Cygna discuss this with Mr. Chamberlain.	

Signed: N A Williams /ajb

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Communications Report

Company: Texas Utilities ☒ Telecon ☐ Conference Report

Project: Comanche Peak Steam Electric Station Independent Assessment Program - Phase 3

Job No. 84042

Date: 2/13/85

Subject: Mass Participation Letter (84042.021)

Time: 10:45 a.m.

Place: SERO

Participants:

	of
J. Finneran	TUGCO
J. Minichiello	Cygna

Item	Comments	Required Action By
	Mr. Finneran called requesting clarification for recommendation nine (page 8 of the letter). I told him that Cygna was recommending that any margin reviews on supports for mass participation also include the effect on margin of the items listed. For example, in reviewing a support with an incorrect composite section calculation, the designer should first determine the correct composite section weld stress. Then, the designer can apply the appropriate increase due to mass participation and determine if sufficient margin still exists.	

Signed: N H Williams /ajb

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Communications Report

Company: Texas Utilities	☐ Telecon	☐ X Conference Report	
Project: Comanche Peak Steam Electric Station Independent Assessment Program - Phase 3		Job No.: 84042	Date: 11/27/84
Subject: Mass Participation Study		Time: 2:00 P.M.	Place: CPSES Site
Participants: G. Krishnan		of: Gibbs & Hill	
J. Minichiello		Cygna	

Item	Comments	Required Action By

Cygna requested the nozzle load comparisons calculations and support load comparison output for the following problems, as part of the mass participation study:

AB-1-1	AB-1-67Z
-6	-68T
-10C	-68Y
-12A	-71B
-19A	-72
-28	-79A
-29V	-79F
-34A	-86A
-36	-88X
-42B	-95
-61A	-135D
-61B	-156
-63C/B	-167B
-64D	-171
-66B	-178B
-67V	AB-2-52U

Note: Support load comparisons received 11/28/84; nozzle load comparisons received 11/29/84.

Signed: N. A. Williams

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Communications Report

Company: Texas Utilities ☒ Telecon ☐ Conference Report

Project: Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 3

Job No.: 84042

Date: 1/4/85

Subject: Mass Participation

Time: 2:50 p.m.

Place: SERO

Participants:

	of
D. Westbrook	TUGCO
J. Minichiello	Cygna

Item	Comments	Required Action By
	D. Westbrook called with the following information for L. Weingart: 1. Cygna should discuss their mass point spacing question with R. Ballard/H. Mentel at Gibbs & Hill. 2. D. Westbrook's preliminary information indicated that 49 problems of the 271 were originally run with refined spectra. Of these, 42 were included in the mass participation study. These numbers should be confirmed by Gibbs & Hill, New York.	

Signed: C. H. McWilliams

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Communications Report

Company: Texas Utilities ☐ Telecon ☒ Conference Report

Project: Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 3

Job No. 84042

Date: 11/28/84

Subject: Mass Participation Study

Time:

Place: CPSES Site

Participants: J. Finneran of TUGCO

J. Minichiello Cygna

Item	Comments	Required Action By
	In our review of the mass participation study supports, Cygna noted that much of the work was unchecked. For example, in problem AB-1-1, support load increases of less than 10% were accepted by judgment and signed off on the Gibbs & Hill load summary. There was no indication this had been checked. Mr. Finneran stated that the mass participation reanalysis was done for study only, not as a record calculation. Thus, the study work would be checked and approved at the completion of the mass participation review. Cygna was performing their review prior to full completion. It was Mr. Finneran's understanding that the loads of record for support design would continue to be the original as-built loads, not those from the mass participation study.	

Signed: W. A. Williams

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Communications Report

Company: Texas Utilities ☒ Telecon ☐ Conference Report

Project: Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 3

Job No. 84042

Date: 11/20/84

Subject: Phase 3 Open Items -
Mass Participation & Mass Point Spacing

Time: 12:20 P.M.

Place: Cygna-SF

Participants:

	of
H. Mentel	Gibbs & Hill
N. Williams	Cygna

Item	Comments	Required Action By
	N. Williams called H. Mentel to obtain a list of the stress analysis problems which were reanalyzed as part of the mass participation evaluation and a list of stress problems which required modification to correct mass point spacings. Cygna will use these lists to select a sample for a spot check review of the work performed by TUGCO and Gibbs & Hill in response to Cygna Phase 3 findings. H. Mentel stated that all the necessary analyses were available for Cygna's review but that the final QA checks were not complete in all cases. It does not appear necessary to hold the Cygna review up due to paperwork format, however, H. Mentel said the mass participation list could be telecopied tomorrow and the mass point spacing list could be telecopied tomorrow morning. In closing, N. Williams told H. Mentel that L. Weingart would probably be at Gibbs & Hill on November 27, 1984 for the review.	

Signed: N. H. Williams /ajb

Page 1 of 1

Distribution: N. Williams, D. Wade, J. van Amerongen, L. Weingart, J. Minichiello, J. Ellis, S. Burwell, S. Treby, Project File

1020.01a

CYGNA

Communications Report

Company: Texas Utilities ☒ Telecon ☐ Conference Report

Project: Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 3

Job No: 84042

Date: 11/30/84

Subject: Mass Participation Review Process (PSE)

Time: 9:30 A.M.

Place: CPSES Site

Participants:

	of
M. Chamberlain	TUGCO (PSE)
J. Minichiello	Cygna

Item	Comments	Required Action By
	Upon reviewing the loads sheets, the engineers reviewed the calculations to see if the loads were acceptable. Increases < 5% were not distributed. Anchors & Gang Hangers The clerks held each "gang support" until all the new load sheets were in, then the support was reviewed for all the load increases. Three-Sided Welds If load increases showed the weld would be close to allowable, engineers would perform calculation for correct loads.	

Signed: N A Williams

Page /ajb 1 of 1

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CYGNA

Communications Report

Company:	Texas Utilities	☒ Telecon	☐ Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 3	Job No:	84042
		Date:	11/20/84
Subject:	Phase 3 Open Items - Mass Participation and Mass Point Spacing	Time:	11:00 A.M.
		Place:	Cygna-SF
Participants:	J. Finneran	of	TUGCO
	N. Williams		Cygna

Item	Comments	Required Action By
	J. Finneran returned N. Williams' phone call regarding the scope of the mass participation and mass point spacing reviews. As far as obtaining listings of the reanalysis scopes, J. Finneran directed Cygna to D. Westbrook or H. Mentel. The pipe support load increase accessments were conducted on site and a list comparing the old and new loads for each piping problem was available. J. Finneran had directed the engineers involved in the pipe support review to maintain a separate filing system as well. As a result, Cygna's effort may be reduced due to accessibility of the necessary data. N. Williams inquired about an average percentage of the supports that had a load increase in order to estimate the manpower necessary for the review. J. Finneran said he would call back with the information later in the day. N. Williams said that the current plan was to send the reviewer(s) to CPSES on November 27, 1984, if all information would be available.	

Signed: N. R. Williams /ajb

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Communications Report

Company:	Texas Utilities	☒ Telecon	☐ Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 3	Job No.	84042
		Date:	1/14/85
Subject:	Mass Participation Study	Time:	11:30 a.m.
		Place:	SFRO
Participants:	H. Mentel	of	Gibbs & Hill
	L. Weingart		Cygna

Item	Comments	Required Action By
	Mr. Mentel agreed to provide the following information which is required to complete Cygna's response to the mass participation study: 1. The number of problems originally run (i.e., before the mass participation study) with refined response spectra. 2. The number of above analyses which were rerun as part of the mass participation study. 3. Specific details regarding the concentrated weight "bug" in ADLPIPE Version C. 4. The information on nozzle loads for problems 67V, 86A and 135D as promised in the 12/13/84 note.	

Signed: N A Williams /ajb

Distribution: N. Williams, D. Wade, J. van Amerongen, L. Weingart, J. Minichiello, S. Treby, J. Ellis, S. Burwell, Project File

1020.01a

CYGNA

Communications Report

Company:	Texas Utilities	☒ Telecon	☐ Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 3	Job No.:	84042
		Date:	1/3/85
Subject:	Mass Participation Study	Time:	9:30 a.m.
		Place:	SFRO
Participants:	D. Westbrook	of	TUGCO
	L. Weingart		Cygna

Item	Comments	Required Action By
	Mr. Weingart called Mr. Westbrook to request some information required for Cygna to issue a letter commenting on Gibbs & Hill's mass participation study, the specific questions were: 1. How many stress problems were originally run using refined response spectra? 2. How many of these problems were rerun as part of the mass participation study? 3. What are the specific details of the concentrated weight problem with ADLPIPE Version C, which is briefly discussed in the Gibbs & Hill report? Mr. Westbrook did not have the specific answers but would try to track down the appropriate Gibbs & Hill people to provide the answers.	

Signed: N A Williams /ajb

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1020.01a

CYGNA

Communications Report

Company: Texas Utilities ☒ Telecon ☐ Conference Report

Project: Comanche Peak Steam Electric Station Independent Assessment Program - Phase 3

Job No. 84042

Date: 12/11/84

Subject: Phase 3 Final Report Review Questions - Piping

Time: 8:45 a.m.

Place: SERO

Participants:

	of
D. Terao	US NRC
T. Bridges	EG&G
N. Williams, J. Minichiello	Cygna

Item	Comments	Required Action By

Reference: Telecon dated 12/10/84 between D. Terao, T. Bridges and N. Williams at 9:50 a.m.

In response to Cygna's open item on the above referenced telecon, the following information was provided.

Observation PI-00-07 is concerned with the qualification of the Fisher Valves to the loads contained in the reference 3.1 through 3.4 stress analyses. These are analyses of the four Main Steam lines outside containment. Rev. 0 to stress problem AB-1-23B (reference 3.2), had considerably higher loads for the snubbers attached to the valve when compared to the other three problems. Cygna felt that these larger and therefore enveloping loads should be used in the valve qualification. TUGCO responded by saying that this one pipe stress problem was analyzed more conservatively than the other three problems. TUGCO then provided Cygna with the reanalysis of AB-1-23B (reference G. Grace (TUGCO) memorandum to N. Williams (Cygna), dated July 5, 1984) in which the snubber loads were reduced to the same order of magnitude as the other three problems.

Observation PI-00-02 deals with the acceptability of welded attachments in break exclusion zones. The first example of unacceptable stress levels occurs at the welded attachment for supports MS-1-240-001-S72K and MS-1-240-002-S72K. These supports may be found on stress problem AB-1-23B. The reference to reduced SAM loads as a basis for accepting the welded attachment is actually the revised analysis of AB-1-23B done for the reasons discussed above as part of the resolution to Observation PI-00-07.

Signed: N H Williams /ajb

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1020.01A

Item	Comments	Required Action By

The table contained on page 1 of Attachment A to Observation PI-06-01 is based on revision 0 to problem AB-1-23B (i.e., the run with the higher SAM loads).

Cygna will revise the resolution to Observation PI-00-02 to read:

> "The first attachment, at MS-1-240-001-S72K and MS-1-240-002-S72K, can be qualified when the lower SAM loads provided in revision 1 to stress problem AB-1-23B are considered."

Mr. Terao asked what were the differences between revision 0 and revision 1. Cygna explained that,

(1) the refined spectra were used;
(2) SAM movements based on actual support locations were used; and
(3) a more detailed model of the relief valve was input.

Cygna explained that the changes brought AB-1-23B into agreement with the other three Main Steam analyses. Cygna also explained that the effects were not major (33% locally).

Mr. Bridges commented that the stresses in PI-06-01 did not include the break exclusion check. Ms. Williams explained that the check was done as part of PI-00-02 and did include the summation of the welded attachment effects. Cygna will further revise Attachment A to PI-00-02 and PI-06-01 to show the welded attachment/break exclusion zone stress check for this support (MS-1-240-001-S72K and -002-S72K). Cygna will also revise Attachment A to PI-00-02 to explain that Gibbs & Hill had reviewed all welded attachments in breaks exclusion zones and Cygna evaluated Gibbs & Hill's review.

Mr. Bridges then asked about the second support in PI-00-02, support number MS-1-003-006-S72R (checklist PS-102). He was concerned first that the pad was outside the "CYLNOZ" program parameters. Mr. Minichiello replied that Gibbs & Hill had reduced the size of the pad in the "CYLNOZ" analysis to fit within the program limits, as explained in PI-00-02. This modification of the geometry to fit within WRC107 parameters (the paper on which CYLNOZ is based) is common within the industry. Different organizations used different modification techniques, each designed to give a conservative estimate of the stress.

Mr. Bridges was also concerned that the line contact stresses in the pipe at its interface with item 30 would be high. Cygna explained that this had been one of the concerns Cygna had raised in their April 23 telecon with TUGCO. Further review by Dr. Bush of Cygna's Senior Review Team indicated, however, that not only were the requirements unclear in this case, experience with

Item	Comments	Required Action By
	similar geometries in fossil plants showed no detrimental effects. Thus, Cygna had concluded that this item was acceptable. Mr. Terao noted that such a history trail would be of interest to the NRC on a number of issues. He suggested that it might be useful in the proposed Cygna/TUGCO/NRC meeting to approach each of the Walsh/Doyle concerns in this manner.	

CYGNA

Communications Report

Company: Texas Utilities ☐ Telecon ☒ ☐ Conference Report

Project: Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 3

Job No. 84042

Date: 1/8/85

Subject: Scope of NRC Meeting - 1/10/85

Time: 9:30 a.m.

Place: SERO

Participants:

	of
D. Wade	TUGCO
N. Williams	Cygna

Item	Comments	Required Action By

N. Williams relayed the scope of the upcoming NRC meeting to D. Wade as follows:

1. Discussion of Cygna Open Items:

PI-00-05:	Mass Participation Observation
PI-00-01:	Stress Intensification Factors Observation
PI-00-07:	Fisher Main Steam Relief Valve Observation
PI-09-01:	Missing Mass Point Observation
PS-03:	Cinched U-Bolts/Double Trunnion Observation
PS-01:	Strudl Input Errors Observation

2. Discussion of Staff Questions Related to:

Observation PI-00-01:	Mass Participation
Observation PI-00-02:	Local Stress Consideration in Break Exclusion Zones
Observation PI-00-06:	Support Design Loads Not Matching Stress Output
Observation PI-09-01:	Missing Mass Point
Observation PS-01:	Strudl Input Errors
Observation PS-04:	Undersized Fillet Welds
Observation DC-02-04:	Evaluations of Gibbs & Hill Design Reviewers Were Not Performed on an Annual Basis, Checklist Items PS-102 (for example)

Signed: NF Williams /ajb

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Item	Comments	Required Action By
	3. Discussion of Cygna Conclusions: D. Wade inquired about the status of Cygna's letter commenting on the Gibbs & Hill/TUGCO mass participation study. N. Williams informed him that Cygna is still awaiting clarification of some data which was transmitted by D. Westbrook/TUGCO to L. Weingart/Cygna which conflicts with information gathered during Cygna's review in the Gibbs & Hill offices in New York. Cygna is awaiting H. Mentel's return to obtain the required clarification.	

CYGNA

Communications Report

Company: Texas Utilities ☒ Telecon ☐ Conference Report

Project: Comanche Peak Steam Electric Station
Independent Assessment Program - Phase 3

Job No: 84042

Date: 12/10/84

Subject: Phase 3 Final Report
Review Questions - Piping

Time: 9:50 a.m.

Place: SFRO

Participants:

	of
D. Terao	US NRC
T. Bridges	EG&G
N. Williams	Cygna

Item	Comments	Required Action By

As part of EG&G's review of the Cygna Phase 3 report, the following questions were discussed.

1. Question 1

   Observation PI-00-02 has a reference to Observation PI-00-07 for justification of lower SAM loads. Upon review of PI-00-07, Mr. Bridges could not find any discussions on reduced SAM loads. He suggested that perhaps the correct reference may be PI-06-01. And then, the margins referred to in PI-06-01 are only 1%.

   Cygna Response

   Ms. Williams agreed to check the references and call back Mr. Terao as soon as possible.

   Status: Cygna to check observation references.

2. Question 2

   Document reference 3.3 on Observation PI-06-01 is for drawing number MS-1-240-002-S72K. Mr. Bridges could not find a checklist for this support.

Signed: N. A. Williams /ajb

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1020.01a

Item	Comments	Required Action By

Cygna Response

Ms. Williams explained that this support was not part of the original Phase 3 review scope. This support is located on the branch line while the pipe support review scope included supports on the main flow path and anchors on the branch lines for the stress problems chosen. The only reason this support was mentioned was because Cygna performed an expanded review of the welded attachments and this support happened to share a trunnion with one of the supports in our review scope.

CYGNA

Communications Report

Company:	Texas Utilities	☐ Telecon	☒ Conference Report
Project:	Comanche Peak Steam Electric Station Independent Assessment Program - Phase 3	Job No.:	84042
		Date:	9/28/84
Subject:	Mass Participation Study	Time:	9:00 a.m.
		Place:	G&H/New York

Participants:		of
	H. Mentel	G&H
	Hy Chang	G&H
	C. Mortgat	Tenera
	J. Minichiello	Cygna

Item	Comments	Required Action By
	The purpose of this discussion was for Cygna to review the status of the G&H study on Mass Participation. At this time, G&H had completed the following: (1) Rerun 35 problems representing a wide range of mass fractions (attachment pages 1 and 2). (2) Used ADLPIPE version D with a cutoff of 50 Hz and refined response spectra. (3) Summarized the number of supports and number of individual support directions (since 1 support may have loads in X, Y, and Z), for each pipe size in the sample, as shown on attachment, page 3. (4) Established a minimum reasonable support design load (for a sample, see insert on attachment, page 9). New support loads which were still below this minimum load would not be considered in the remainder of the study. The same minimum load was used for both upset and emergency. (5) Determined the percent increase (or decrease) for each support with loads above the minimum. This data is shown in the attachment on the bottom of page 3 (upset) and on page 6 (emergency). This informaton is displayed graphically on pages 4-5 (upset) and on pages 7-8 (emergency). (6) Plotted the percent load increase versus mass fraction in that direction of load, as shown on attachment, pages 9 - 12. Except for a few data points, all the increases fall below a line between 0.0, 200% and 0.8, 10%.	

Signed: N H Williams /ajb

Distribution: N. Williams, D. Wade, J. van Amerongen, J. Minichiello, L. Weingart, G. Bjorkman, S. Treby, J. Ellis, S. Burwell, Project File

Item	Comments	Required Action By

(7) G&H then wished to know what margin existed in supports for each pipe size. A plot was generated displaying pipe size versus support load (attachment, page 13). This was used to determine an "average" load for each size of pipe. Using this data developed for Dr. Iotti on 114 random supports, plots were developed showing allowable percent load increase versus actual/average support load for each size pipe. That is, for 10" pipe they would take all the 10" supports in the sample of 114, determine the average load and also determine the margin for each support. A typical plot is shown on attachment, page 14.

(8) G&H then planned to screen future supports by first determining the percent load increase based on mass fraction (from attachment, pages 9 - 12). Then the percent allowable increase would be determined by entering the appropriate pipe size curve with the ratio of the old support load divided by the average load. If the first percent was larger than the second, that support would be sent to TUGCO for review.

Cygna reviewed the G&H data as follows:

(1) Cygna spot checked the data on attachment, page 3, and found it acceptable.

(2) Cygna reviewed the minimum loads used by G&H. Based on Catalog data and minimum steel and weld sizes, the loads are reasonable expected capacities.

(3) Cygna checked the reanalysis of problems 2-63B, 1-27, and 1-2 and found the runs acceptable.

(4) Cygna found that the G&H sample included 16 problems with seismic anchor motion and 19 without seismic anchor motion; this representing a reasonable sample of both types.

As a preliminary comment, Cygna did state that the sample size of 114 did not seem reasonable as a basis for conclusions. Cygna will attempt to determine a more reasonable sample size, perhaps equal to the total number of supports in the study (i.e., approximately 740). Response will be in a letter to TUGCO by Monday, October 1. Cygna will also comment on the remainder of the study at that time.

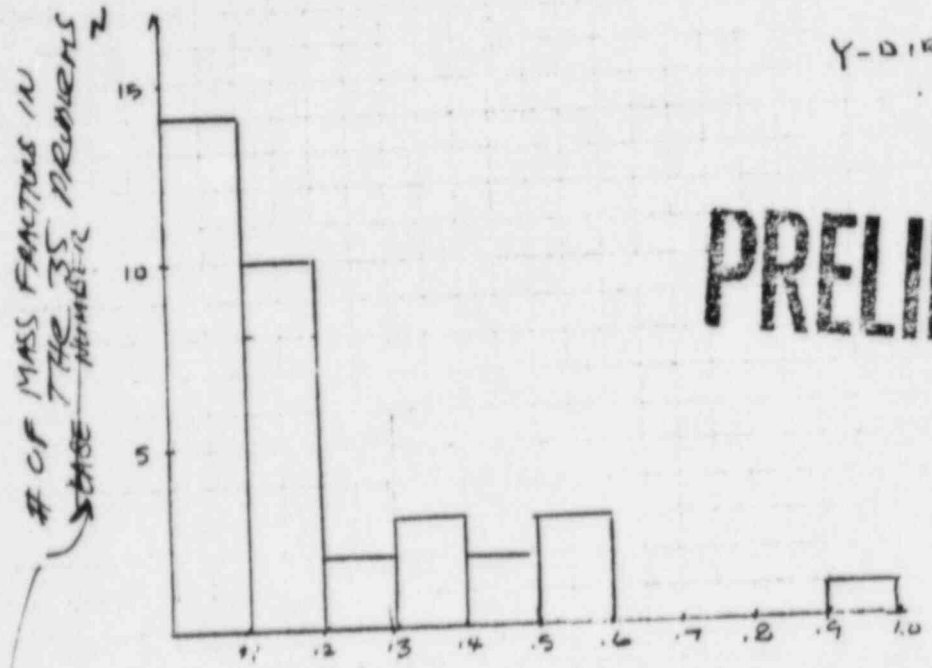
ATTACHMENT 1

Gibbs & Hill, Inc. Job No. Client

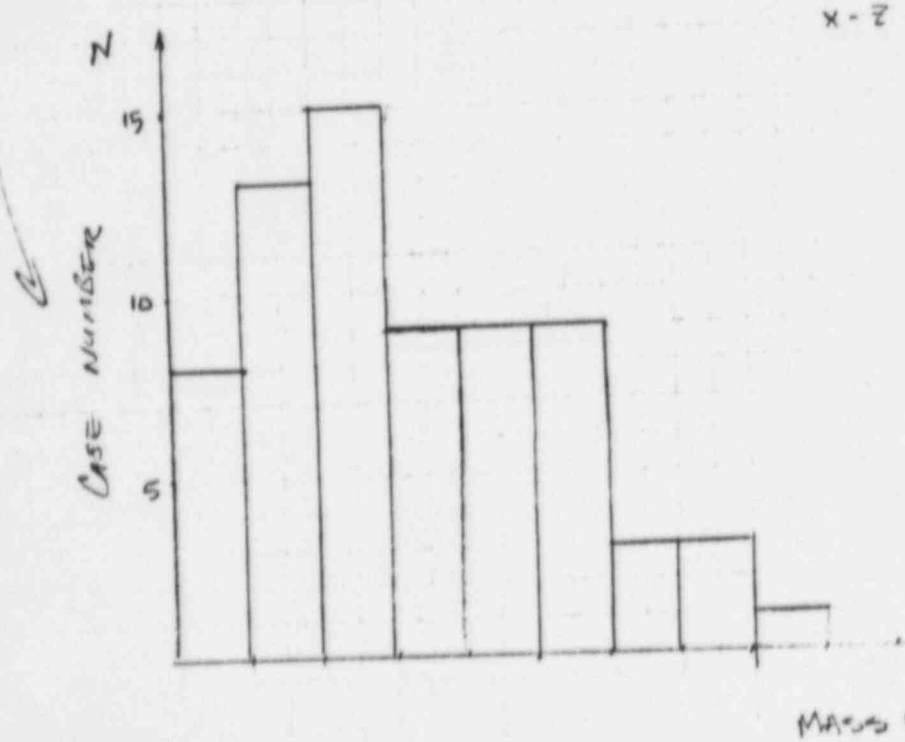
Subject

Calculation Number Sheet No.

Revision	Original Issue	Date	Rev.	Date	Rev.	Date	Rev.	Date	Rev.	Date	Rev.	
Checking Method #												
Preparer												
Checker												



PRELIMINARY



F-166, 7-82

Checking Method #
1. Line-by-line checking
2. Alternative Calculation Results compared
3. Identical Calculation Results compared
4. Compare inputs and results of computer with corresponding inputs and results of similar codes

Gibbs & Hill, Inc. Job No. Client

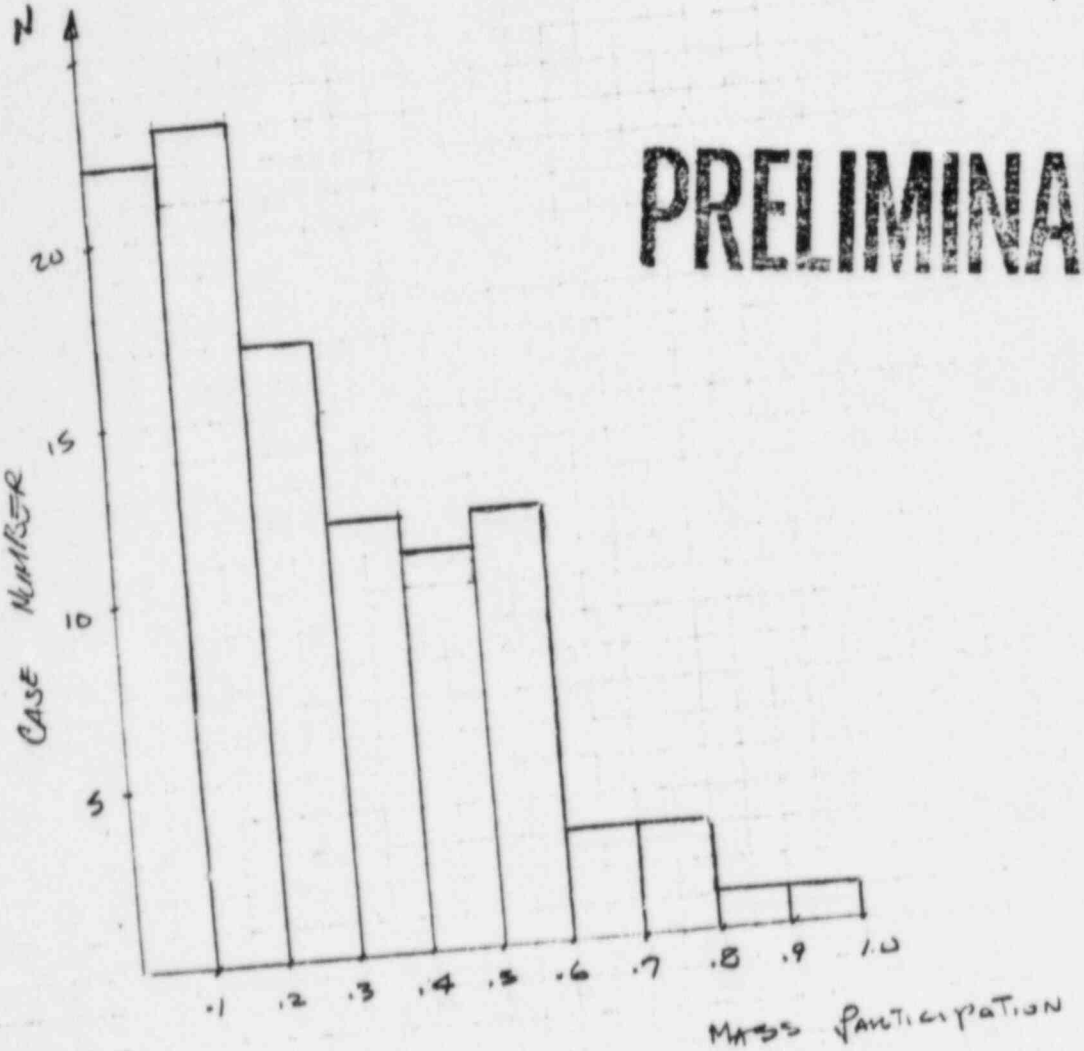
Subject Sheet No.

Calculation Number

Revision	Original Issue	Date	Rev.	Date	Rev.	Date	Rev.	Date	Rev.	Date	
Checking Method #											
Preparer											
Checker											

TOTAL X-Y-Z

PRELIMINARY



F-166, 7-82

Checking Method #
1. Line-by-line checking
2. Alternative Calculation Results compared
3. Identical Calculation Results compared
4. Compare inputs and results of computer with corresponding inputs and results of similar codes

Gibbs & Hill, Inc. Job No. Client

Subject Sheet No.

Calculation Number

Revision	Original Issue	Date	Rev.	Date	Rev.	Date	Rev.	Date	Rev.	Date	
Checking Method #											
Preparer											
Checker											

TOTAL PROBLEM NO. = 35

PRELIMINARY

PIPE SIZE	TOTAL NO. OF SUPPORTS	X COMPONENT	Y COMPONENT	Z COMPONENT
Less 2"	31	13	12	19
2"	89	50	57	33
3"	78	28	37	38
4"	212	114	125	115
6"	137	91	91	86
8"	31	21	13	22
10"	60	24	24	23
12"	53	29	34	26
16"	12	2 (72)	6 (52)	6 (72)
18"	26	12	9	12
24"	5 (014)	3 (014)	1 (24)	3 (26)
32"	8	4 (.8)	3 (.9)	4 (.78)
TOTAL	740	391	412	387 = 1140
REMAIN AFTER COMPARED WITH MIN. LOAD		183	248	174
NO. OF OVER LOAD INCREASES		44	100	47
% (NO. OF SUPPORTS)		~~25%~~ 11%	~~40%~~ 5%	27% 12

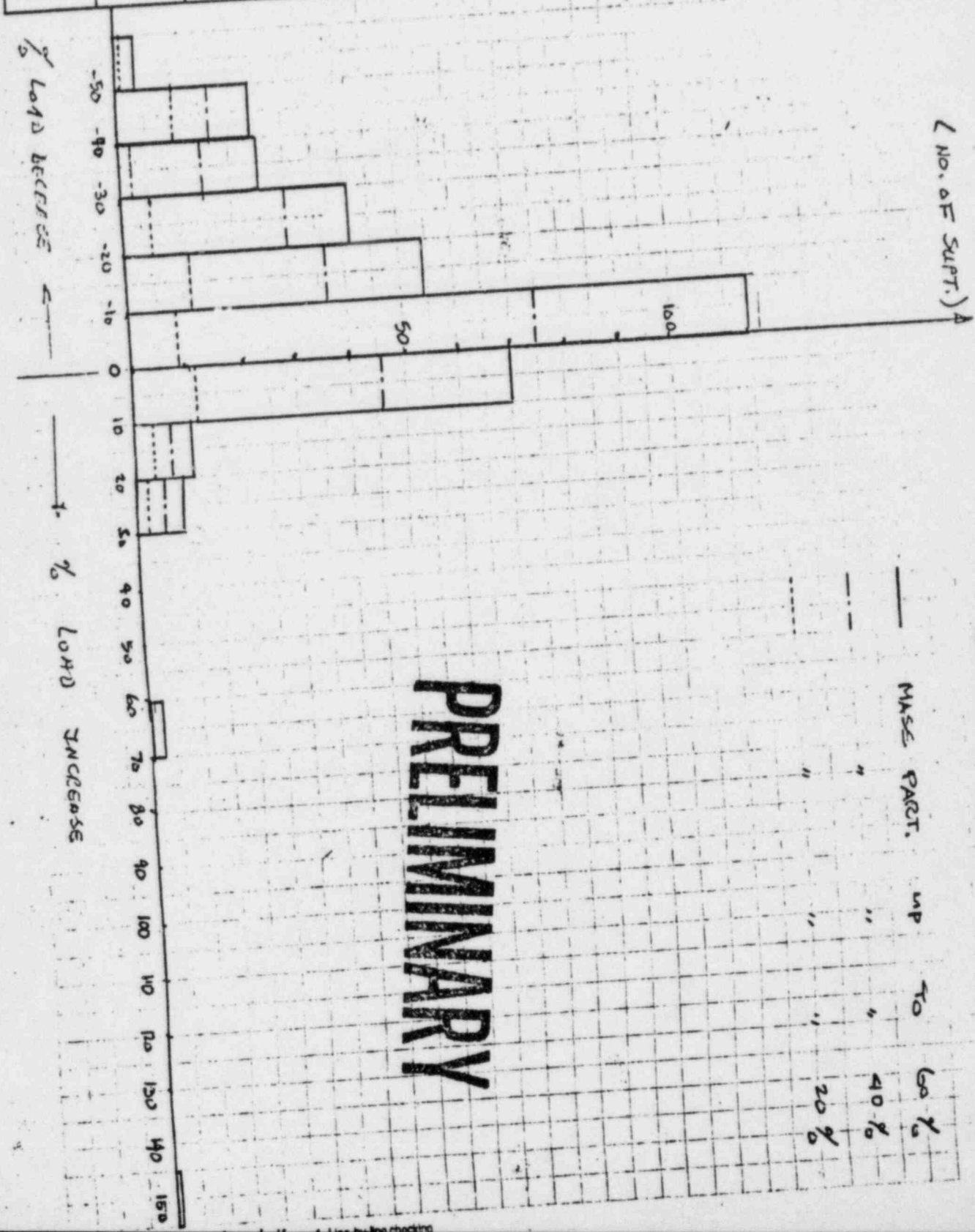
EJAR 7.80

Gibbs & Hill, Inc. Job No. Client

Subject Sheet No.

Calculation Number

Revision	Original Issue	Date	Rev.	Date	Rev.	Date	Rev.	Date	Rev.	Date	
Checking Method		X		X		X		X		X	
Preparer											
Checker											



PRELIMINARY

E-166 7-82

Gibbs & Hill, Inc. Job No. Client

Subject

Calculation Number Sheet No.

Revision	Original Issue	Date	Rev.	Date	Rev.	Date	Rev.	Date	Rev.	Date	
Checking Method #											
Preparer											
Checker											

VERTICAL (UPSET)

TOTAL SUPPORT NO. = 248

—— MASS PART. UP TO 40%

---- " " 10%

PRELIMINARY

Checking Method # 1 Line-by-line checking

Gibbs & Hill, Inc. Job No. Client

Subject

Calculation Number Sheet No.

Revision	Original Issue	Date	Rev.	Date	Rev.	Date	Rev.	Date	Rev.	Date	
Checking Method #											
Preparer											
Checker											

TOTAL PROBLEM No. = 35 EMERGENCY

	TOTAL No SUPPORT	X Component	Y Component	Z Component
TOTAL	740	391	412	237 Σ=1,190
REMAINING AFTER MIN LOAD		218	290	102
No OF LOAD INCREASE		65	159	68 Σ=292
% SUPPORT		17	39	15 25%

PRELIMINARY

Checking Method # 1. Line-by-line checking 2. Alternative Calculation Results compared 3. Identical Calculation Results compared 4. Compare inputs and results of computer with corresponding inputs and results of similar codes

Gibbs & Hill, Inc. Job No. Client

Subject Sheet No.

Calculation Number

Revision	Original Issue	Date	Rev.	Date	Rev.	Date	Rev.	Date	Rev.	Date	Rev.	Date
Checking Method #		X		X		X		X		X		X
Preparer												
Checker												

HORIZONTAL (EMERGENCY)

TOTAL SUPPORTS NO. = 440

TOTAL REMAINING NO = 420

——— MASS TART. 30% 60%

- - - - " 40%

— · — · — " 20%

· · · · · " 0%

PRELIMINARY

LUMPED

% LOAD DECREASE

% LOAD INCREASE

Checking Method #

Line-by-line checking
Alternative Calculation Results compared
Identical Calculation Results compared
Complete inputs and results of computer with corresponding inputs and results of similar codes

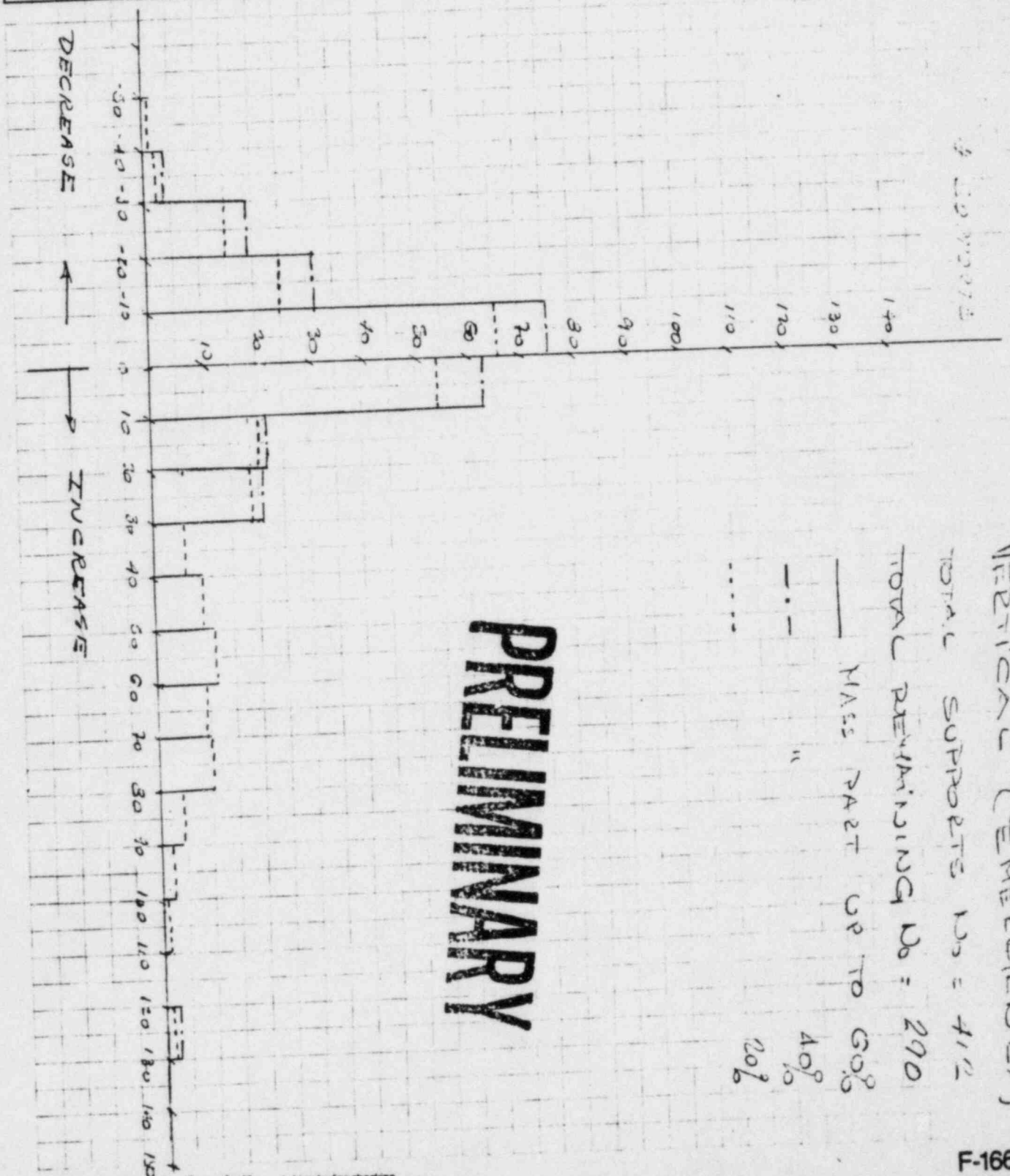
F-166, 7-82

Gibbs & Hill, Inc. Job No. Client

Subject

Calculation Number Sheet No.

Revision	Original Issue	Date	Rev.	Date	Rev.	Date	Rev.	Date	Rev.	Date	Rev.	Date
Checking Method #												
Preparer												
Checker												



VERTICAL (EMERGENCY)
TOTAL SUPPORTS UP = 412
TOTAL REMAINING UP = 290
—— MAIN PART UP TO 60%
- - - " 40%
— · — " 20%

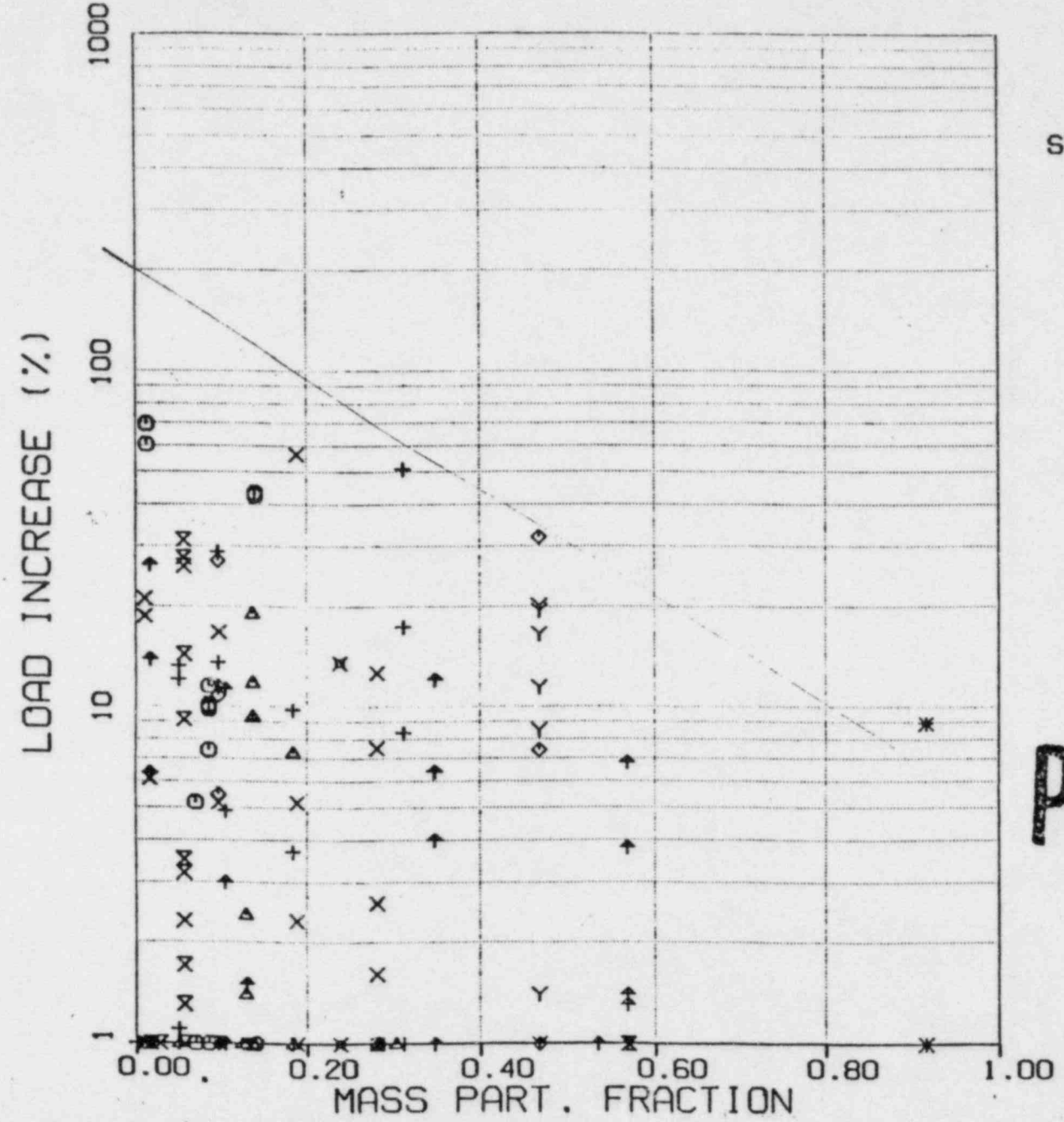
PRELIMINARY

F-166, 7-82

Checking Method #

1. Line-by-line checking
2. Alternative Calculation Results compared
3. Identical Calculation Results compared
4. Compare inputs and results of computer with corresponding inputs and results of similar codes

FIGURE 1
SUMMARY OF SUPPORT LOADS (GROUP C: WITH SNUBBERS)
UPSET MAXIMUM AND UPSET MINIMUM
VERTICAL SUPPORTS

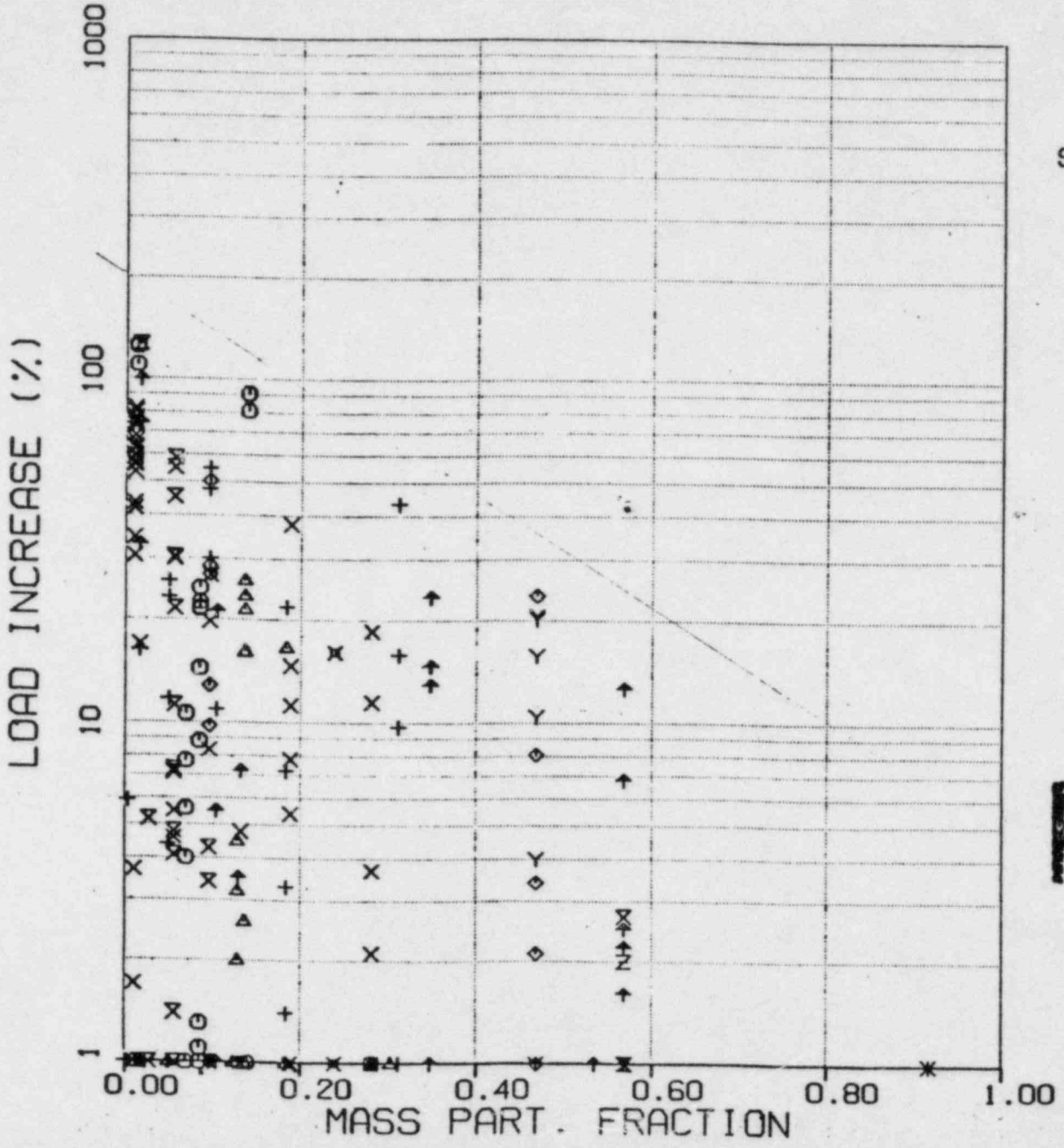


SYMBOL	MINIMUM REASONABLE SUPPORT DESIGN LOAD	
	SIZE	MIN. LOAD
⊙	2.0	200
△	3.0	280
+	4.0	350
×	6.0	500
◇	8.0	600
↑	10.0	750
⧖	12.0	900
Z	16.0	1100
Y	18.0	1300
⌑	24.0	1500
✳	32.0	1800

PRELIMINARY

what to discuss
would we accept?
ex. what anyone else

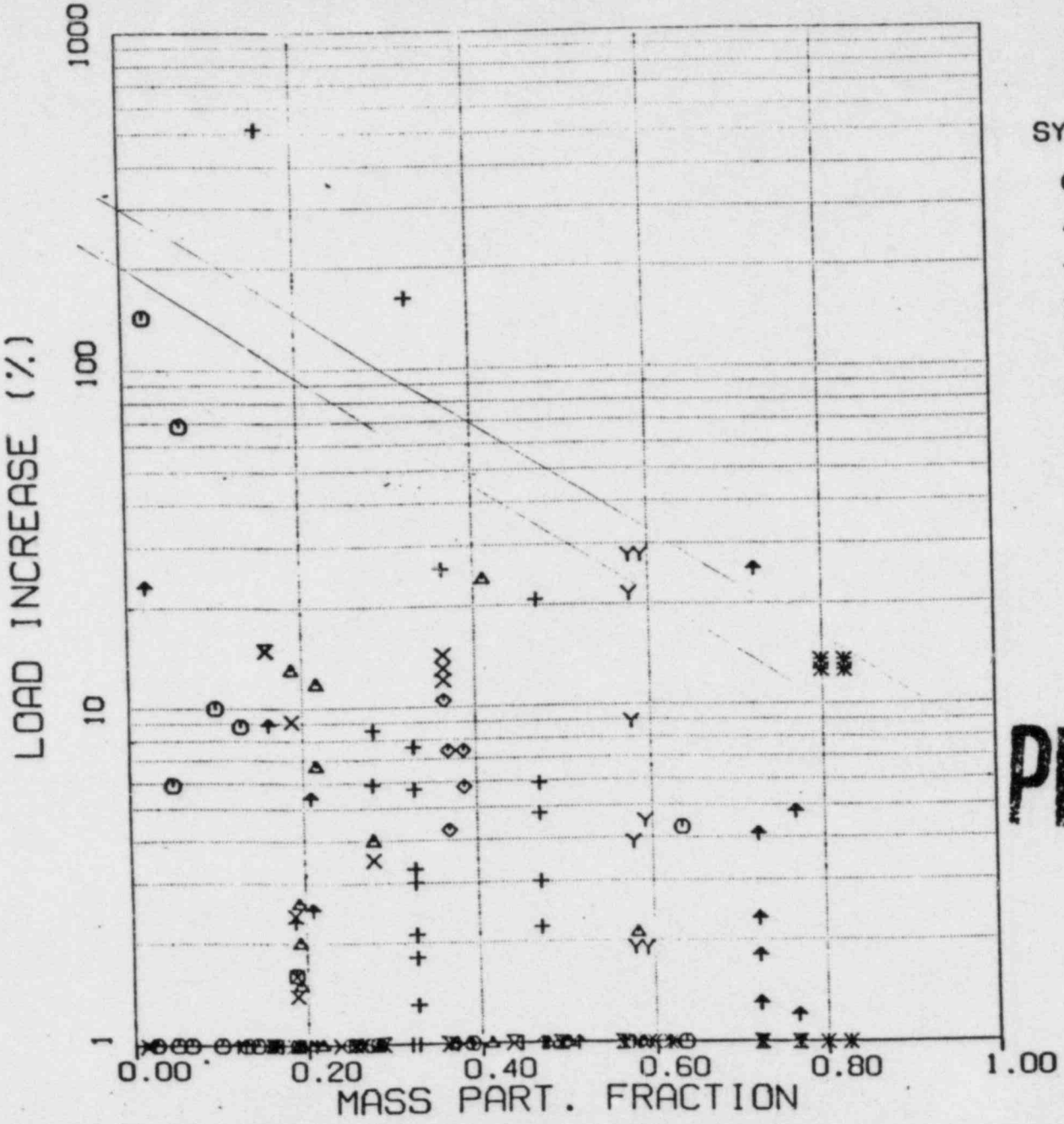
FIGURE 2
SUMMARY OF SUPPORT LOADS (GROUP C: WITH SNUBBERS)
EMERGENCY MAX. AND EMERGENCY MIN.
VERTICAL SUPPORTS



SYMBOL	SIZE	MIN. LOAD
⊙	2.0	200
△	3.0	280
+	4.0	350
X	6.0	500
◇	8.0	600
↑	10.0	750
⧖	12.0	900
Z	16.0	1100
Y	18.0	1300
⌘	24.0	1500
✳	32.0	1800

PRELIMINARY

FIGURE 3
SUMMARY OF SUPPORT LOADS (GROUP C: WITH SNUBBERS)
UPSET MAXIMUM AND UPSET MINIMUM
HORIZONTAL SUPPORTS



SYMBOL	SIZE	MIN. LOAD
⊙	2.0	200
△	3.0	280
+	4.0	350
×	6.0	500
◇	8.0	600
↑	10.0	750
⧖	12.0	900
Z	16.0	1100
Y	18.0	1300
⌑	24.0	1500
✳	32.0	1800

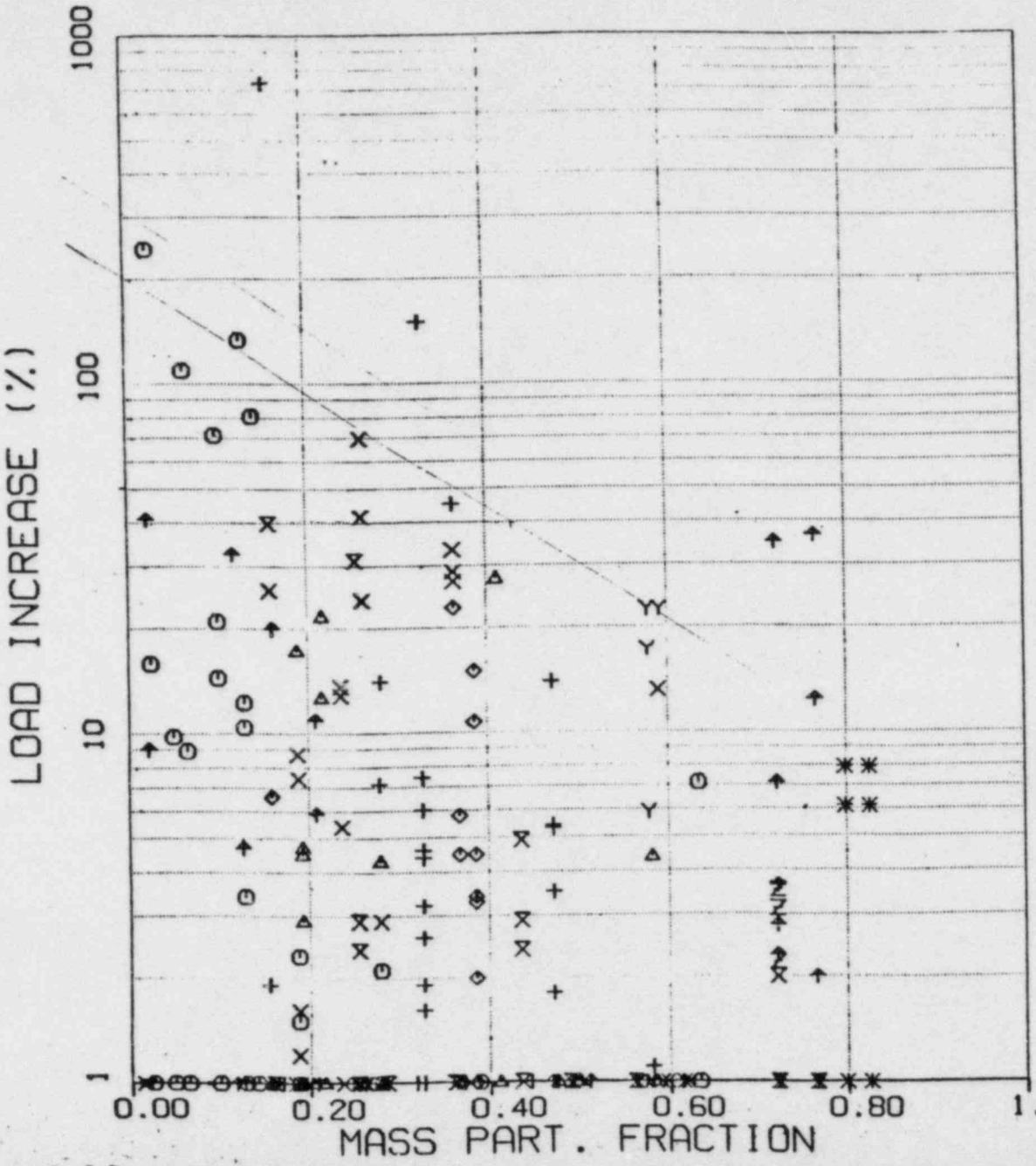
PRELIMINARY

NOTE: SMALL (4") HAVE INCR QUITE A BIT (BUT THEY HAD LOOSE NF)

3a

FIGURE 4
SUMMARY OF SUPPORT LOADS (GROUP C: WITH SNUBBERS)
EMERGENCY MAX. AND EMERGENCY MIN.
HORIZONTAL SUPPORTS

REF 5012



SYMBOL	SIZE	MIN. LOAD
⊙	2.0	200
△	3.0	280
+	4.0	350
×	6.0	500
◇	8.0	600
↑	10.0	750
⋈	12.0	900
Z	16.0	1100
Y	18.0	1300
⊠	24.0	1500
✳	32.0	1800

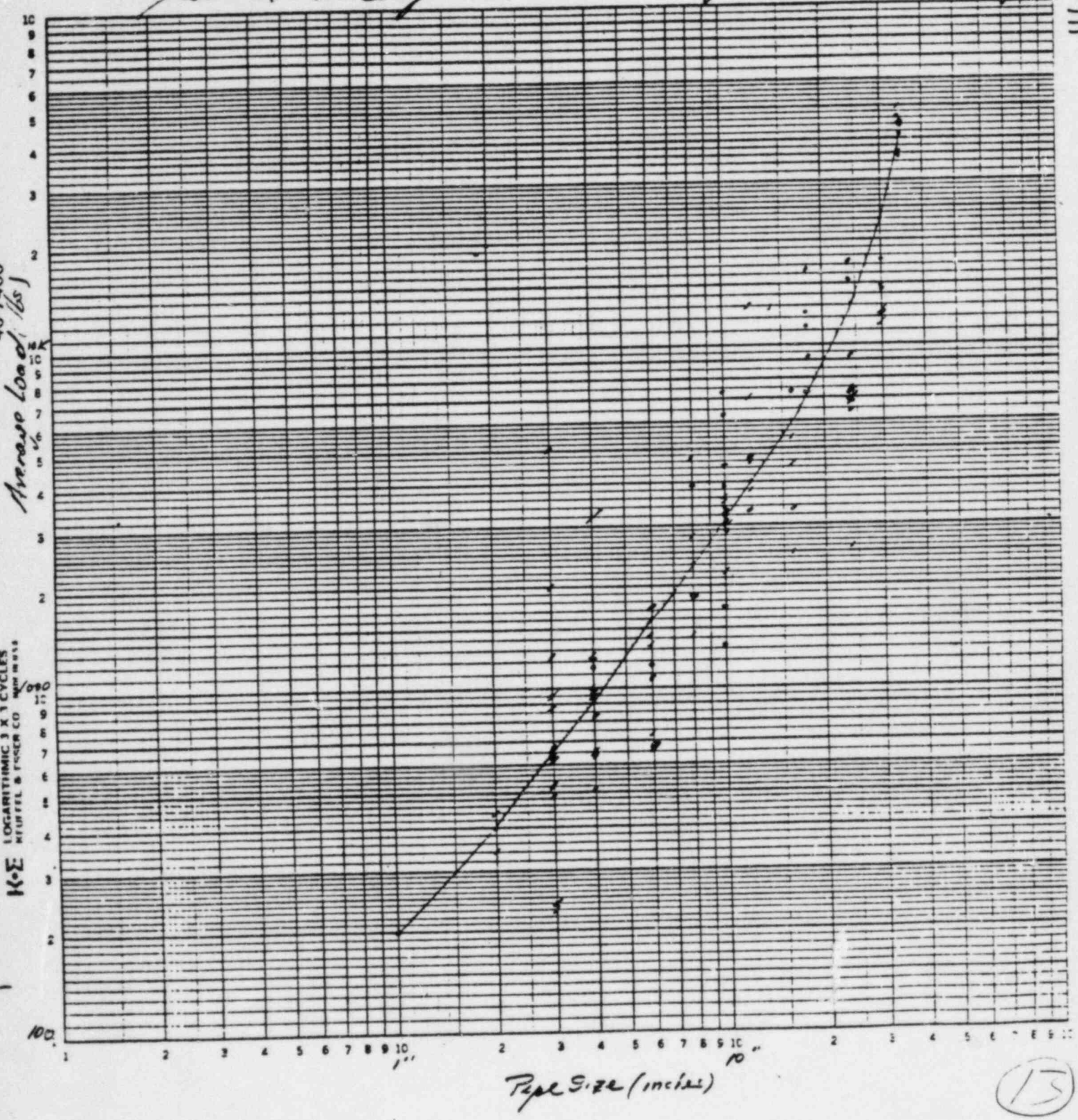
PRELIMINARY

PRELIMINARY

Fig 5

UPSET? CHECK?

Average Load Per Support
generated in conjunction w Loads from EDASCO for other guests

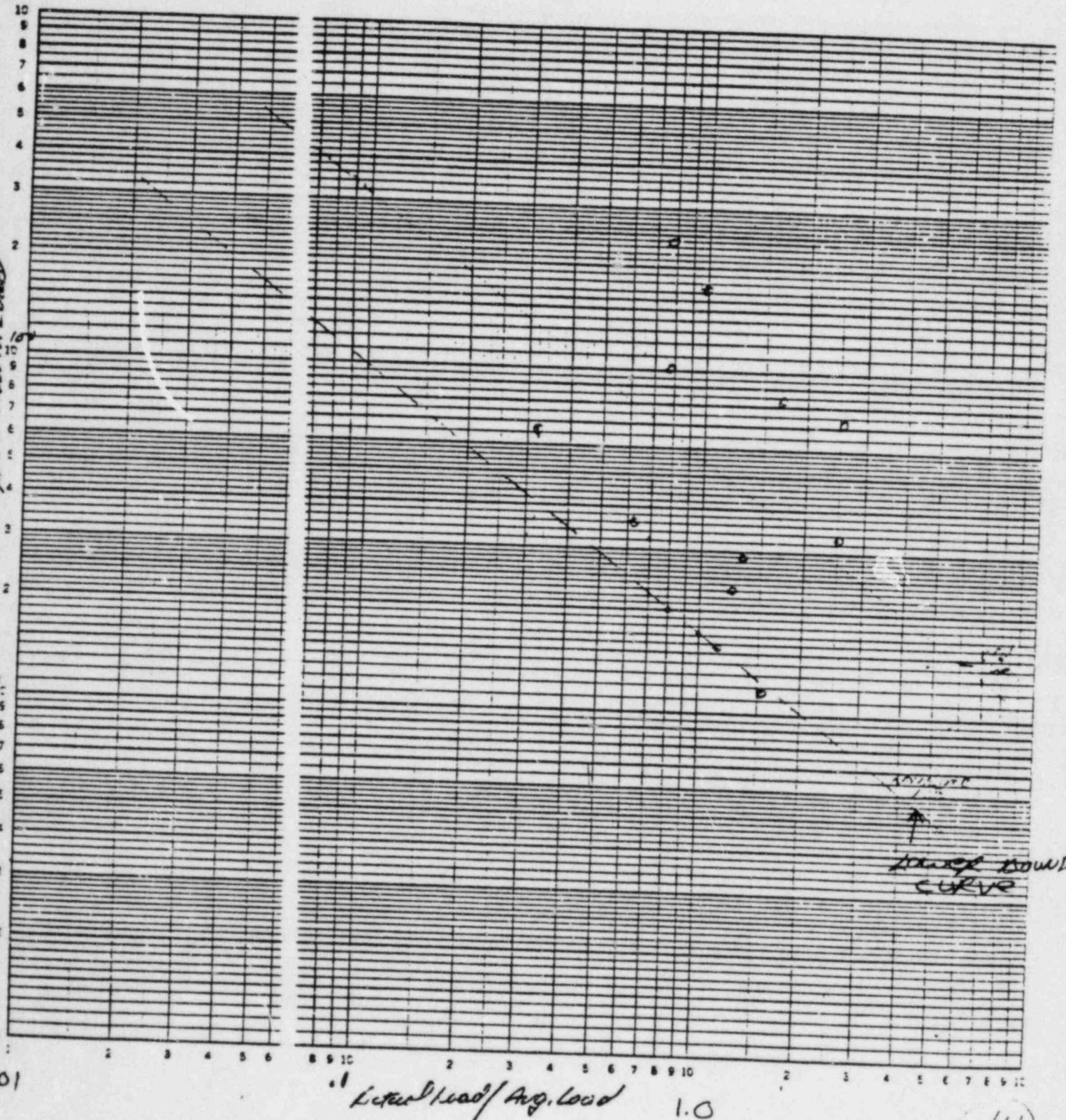


15

FIG 6

PRELIMINARY

ONLY 10° 10" LINE



(14)