ORIGINAL

UNITED STATES
NUCLEAR REGULATORY COMMISSION

IN THE MATTER OF: **DOCKET NO:**

MEETING BETWEEN TEXAS UTILITIES AND THE NUCLEAR REGULATORY COMMISSION REGARDING COMANCHE PEAK STEAM ELECTRIC STATION - QA/QC, APPLICANT'S PROGRAM PLAN

LOCATION: GLEN ROSE, TEXAS **PAGES:** 1 - 151

DATE: TUESDAY, MARCH 5, 1985

ACE-FEDERAL REPORTERS, INC.

Official Reporters
444 North Capitol Street
Washington, D.C. 20001
(202) 347-3700

NATIONWIDE COVERAGE

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MEETING BETWEEN TEXAS UTILITIES AND THE
NUCLEAR REGULATORY COMMISSION REGARDING
COMANCHE PEAK STEAM ELECTRIC STATION -
QA/QC, APPLICANT'S PROGRAM PLAN

Auditorium, Visitor's Center
Comanche Peak Plant
FM Highway 201
Glen Rose, Texas
Tuesday, March 5, 1985
8:30 a.m.

PRESENT:

NAME	ORGANIZATION
VINCENT S. NOONAN	NRC Comanche Peak Project Director
JOSE A. CALVO	NRC/NRR/TRT
H. T. LIVERMORE	NRC/TRT
JIM GAGLIARDO	NRC
ANNETTE VIETTI	NRC/TRT
DAVID REAL	Dallas Morning News
BARBARA BOLTZ	CASE
DR. DAVID BOLTZ	CASE

NAME	ORGANIZATION
DORWIN R. HUNTER	NRC/Region IV
DENNIS L. KELLEY	NRC/Region IV/SRRI(o)
DOYLE M. HUNNICUTT	NRC/Region IV
MARK MANROE	TUGCO
TOM GOSDIN	TUGCO
PHILLIP HALSTEAD	TUGCO
DAVE McAFEE	TUGCO
JAN R. WELLS	TUGCO
BILLY M. CLEMENTS	TUGCO
PAUL FREEMAN	TPL
LESLIE WRIGHT	ERC(Evaluation Research Corp.)
WALT SULLIVAN	SWEC
ED SYHIN	Stone & Webster Eng. Corp.
G. A. HAWORTH	ERC
J. E. YOUNG	ERC
JOHNNIE O. PORTOR	ERC
SIDNEY L. CRAWFORD	ERC
DENNIS ALEXANDER	SWEC
BRUCE MILLER	Fort Worth Star-Telegram
JACK BOOTH	Dallas Times Herald
PAUL E. ORTSTADT	ERC
JOHN R. GELZER, JR.	ERC
JACK REDDING	TUGCO
MIKE PRATT	ERC

NAME	ORGANIZATION
JON CHRISTENSEN	ERC
VIC HOFFMAN	ERC
JOHN GUIBERT	TERA
MICHAEL D. SPENCE	TUGCO
L. F. FIKAR	TUGCO
C. J. HALE	NRC/RIV/TRT
W. H. RUHLMAN	Southern Engineering(For Tx-LA Brazos)
A. DILLINGHAM, JR.	CASE Witness
MEDDIE C. GREGORY	GAP
RICHARD WERNER	TUGCO
CHET POSLUSNY	NRC/TRT
BILLIE GARDE	GAP/CASE
JOHN HANSEL	Evaluation Research Corp.
SHANNON PHILLIPS	NRC

P R O C E E D I N G S

MR. NOONAN: Good morning, ladies and gentlemen. I think I'll go ahead and start this meeting.

My name is Vince Noonan, the Director of the Comanche Peak Project for the NRC.

On my right here I have Herb Livermore, who is the Group Leader for the QA/QC Group TRT. And, also, Cliff Hale, who is his Deputy.

Also participating in this meeting this morning will be Jose Calvo, who is a Group Leader from the Electrical standpoint. He'll be sitting at this table here in a few minutes.

This morning the meeting is what we call the QA/QC Meeting on the Applicant's Program Plan.

And, John, I don't have anything else, any other remarks. I think I'll just go ahead and turn the Meeting over to you. And it's your Meeting.

MR. BECK: Vince, thank you very much.

This morning we are having a presentation on QA/QC, as you indicated. Leading that presentation will be Mr. John Hansel, who is the Issue Team Leader for this particular area of concern, specifically.

And John also provides this technical expertise to the other disciplines as they pursue responses to TRT concerns, and, therefore, assures that any interfaces insofar as QA/QC is concerned are adequately covered in all the technical disciplines.

Mr. Hansel's professional career encompasses over 32 years of experience in this particular discipline, and in the conduct, and management of large complex programs, in the energy business in general, and aerospace projects.

In his current position he is Vice-President of Engineering Services for the Evaluation Research Corporation in Alexandria, Virginia. And prior to this post he was Division Director for Energy and Environmental Sciences Division of that company.

He has served as a Consultant to the NRC on NUREG 1055, a study concerning the improvement of quality and quality assurance, and the assurance of quality, excuse me, in the design and construction of nuclear power plants.

He is currently President of the American Society for Quality Control, and a Registered Professional Quality Engineer, as well as an ASQC Certified Quality Engineer; a member of the National

Contract Management Association, National Society For Professional Engineers, and the American Society of Engineering Management.

John, have at it.

MR. HANSEL: Okay. Good morning.

I would prefer to work from viewgraphs, if that okay; I think that'll be the easiest for me, and we can best handle it that way.

Copies of all the viewfolds are in the package. We found one minor mistake overnight, and I will correct that as we go.

(Copy of Viewgraph No. 1 follows and is made a part of the record.)

(1)

TOPICS - QA/QC

- APPROACH TO QA/QC ISSUES
    - PROGRAMMATIC VS. HARDWARE ISSUES
    - INTERFACE WITH OTHER REVIEW TEAMS AND ACCOUNTABILITY
- CURRENTLY DEFINED ISSUES
    - CONSTRUCTION RELATED ISSUES
    - PROGRAMMATIC
- STATUS OF CURRENT ISSUE SPECIFIC ACTION PLANS

MR. HANSEL: These are the topics that I plan to cover today. I want to talk about the approach that we want to take to the QA/QC issues.

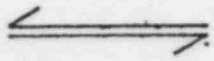
How we are breaking those down, is the Hardware Programs and Programmatic-type issues. Emphasize specifically the interface we have with the other Team, because when the TRT did their review there was not a QA/QC representative on each of those teams.

As I understand, Herb, Cliff, and others, have gleaned a lot of that material from the other TRT leaders, but we will be interfacing with each of those efforts. We are now, to assure complete coverage.

Then I want to talk specifically about each of the programs that we now have defined as falling into Programmatic, and those that fall into the Hardware categories. Then I'm going to talk about the status of each of those individually.

(Copy of Viewgraph No. 2 follows and is made a part of the record.)

PROGRAMMATIC ISSUES				
ISSUE	HARDWARE IMPACT		SYSTEM FIX REQUIRED	
	YES	NO	YES	NO
INSPECTION				
MATERIAL CONTROL				
DEFICIENCIES				
CORRECTIVE ACTION				
REPORTABILITY				
DOCUMENT CONTROL				
AUDITS				
MGT. ASSESSMENTS				
EXIT INTERVIEWS				
HOUSEKEEPING				
QA/QC PROGRAM				



HARDWARE ISSUES					
ISSUE	DESIGN	CONST	QA	QC	
				INIT	POST
FABRICATION SHOP					
VALVE DISASSEMBLY					
PIPE SUPPORTS					
HILTI BOLTS					
FUEL POOL LINER					
CABLE TRAY SUPPORTS					
BUTT SPLICES					

MR. HANSEL: If you take the material that was provided in the January 8th letter, you can put it into two distinct buckets right off the bat; you can put some and label them as Programmatic Issues and you can put some in specific Hardware Issues.

And we recognize already from what's happening in the other areas that if you have a Hardware Issue you probably also have some implications of a Programmatic Issue. If you have a Programmatic Issue you may also have implications of certain Hardware Issues.

Initially, and this has changed somewhat since I showed this to the Contention 5 Panel, because we now have identified, at least from a starting standpoint, these Programmatic Issues that we're going to be reviewing. We have also broken down the January 8th letter these particular Hardware Issues.

I'd like to spend some time on this chart because it's very important that you understand the approach we're going to take. We want to get to the Hardware Issues quickly. So, any of these Programmatic Issues, one of the very first questions we will be asking ourselves is: Could that Programmatic Issue, or did it have an impact on Hardware? If it did, then we are going to quickly, after some analysis, put

it over into this area and start to pursue it from a Hardware standpoint.

If it's purely Programmatic and procedural paperwork and could not or did not have an impact on the Hardware then it will stay in the Programmatic area. I'll talk about the Programmatic box first.

As you can see, the very first decision point is: Did it have an impact on the Hardware? Yes? Or No? If it did, it goes to the right-hand side; if not, it stays there and we'll work it from purely a Programmatic standpoint.

We'll then go about doing a detailed review to determine if in fact the procedure needs improving; the procedures, the controls, the plans, need to improvement to fix things from here forward, and to fix the systems.

We do not see in a lot of cases the need to go back and do a lot of historical review, except to identify the extent of the cause of the concern in Programmatic Issues. We feel like the real proof of the pudding will be in the Hardware. If we find that the Hardware is good, then a lot of the conclusions that we'll come to on this plant will be based upon the adequacy of the Hardware. And just to

go back and fix procedures in the past for the sake of fixing procedures, we really don't see quite the advantage to that.

On the Hardware side, if we look at Hardware after the design is complete then you have the translation of the design documents and the construction documents for use by the craft, and you have the translation of that material into the actual inspection procedures that the Inspectors used, and that's usually done by a QA organization. And then you have the inspection activity. So to get to the root of where the problem occurred and where if there was a problem at what part of that sequence did it occur, our analysis will go into a lot of depth to determine if in fact the design was received and transferred to the construction people and the craft people, and the craft people then were able to go build it like it was meant to be, like it was designed.

We will also be looking for a one-for-one translation between the design requirements, and what the Quality Assurance people extracted from there, gave to the Inspectors to inspect.

Then you will notice two columns in the QC area. At least some of our initial investigation told us that some of the items were disturbed after

the initial inspection. So, we plan to get down to this point and try to determine if in fact the initial inspection was accomplished properly. And if it was disturbed after that, that's a different kind of problem. Then we need some other procedures and controls in place to keep the Hardware in its as-designed, as-built condition after the initial inspection.

If we in fact find that there may have been a problem on the initial inspection, either due to a procedural inadequacy or people problem, training problem, inspection aid, or whatever, then we have another problem. We may have some generic implications that says there may be some other Hardware out there that requires some additional inspection.

So, that's the logic that we will be going through in that particular area. The two arrows merely means that things will be popping back and forth, because if we go through as we proceed through this morning we see that some of our action plans get very detailed in trying to sort out where the problem occurred and what caused it. And it very well may have generic implications back on the Programmatic side.

Please stop me at any time if you have any questions.

MR. HALE: Thank you. I was waiting for

that, John.

On that last slide there there's one of the interfaces, and certainly one of the paths back from Hardware Issue to Programmatic Issue would be a system of trending. You can fix an individual item, but unless somewhere you are looking at the collective items, it's not going to identify a soft spot in the Programmatic Issue, and I was wondering how you worked the trending into, or if there was some kind of trending that you were going to be doing with respect to that arrow going from Hardware to Programmatic Issues.

MR. HANSEL: I'll address that later on, John.

MR. HALE: Okay. That's good enough.

MR. HANSEL: We're going to do a number of things. We're going to be looking at trending efforts. We're going to be looking at enough Hardware and enough documentation to also give us some trends, but you'll see that we have one chart where everything comes together from these plans, and all the other teams, that we'll be looking at the total QA/QC Program from an effectiveness standpoint, which will in fact be a trending type of effort.

MR. HALE: All right.

(Copy of viewgraph No. 3 follows and is made a part of the record.)

PROGRAMMATIC ISSUES

APPROACH

- REVIEW, SUMMARIZE AND ANALYZE HISTORICAL DATA
- DETERMINE IMPACT ON HARDWARE.

- NO HARDWARE IMPACT
  - DETERMINE AREAS WHERE IMPROVEMENT CAN BE MADE
  - MAKE PROGRAM RECOMMENDATIONS
- HARDWARE IMPACT
  - RECLASSIFY AS A HARDWARE ISSUE AND FOLLOW INVESTIGATIVE LOGIC PLAN

MR. HANSEL: I'll walk through these next one or two rather quickly, but these kind of summarize what I've just said on the previous chart.

This is the sorting on Programmatic of Hardware versus no Hardware, and how we would go through that process.

(Copy of viewgraph No. 4 follows and is made a part of the record.)

MR. HANSEL: And this pretty well talks about how we would address the Hardware Issue. I think there are a couple of key points. We have taken all of the data that has been given to us to date by the NRC from these three letters and the SSER No. 7 that we received.

I think the point of interest, also, to you that we plan to take each SSER and in conjunction with the other review team leaders read those and look for any implications involving QA/QC.

There's a key word here that I'd like to emphasize, and that is "bounding." We plan to rather than go at this in a broad generic nature, and just go out and inspect everything, we plan to try to really identify and bound the issues. What happened? When? What processes were involved? What craft? What contractors? What inspection procedures? What

QA/QC
CONSTRUCTION RELATED ISSUES

GENERAL APPROACH - IDENTIFIED ISSUES

- UNDERSTAND THE ISSUE AND IMPLICATIONS ON QA/QC PROGRAM
  - 9/18/84 LETTER
  - 11/29/84 LETTER
  - 1/08/84 LETTER
- GATHER ALL PERTINENT DATA
- ANALYZE DATA AND INSPECT HARDWARE IF REQUIRED
  - BOUND AND QUANTIFY ISSUE
  - DETERMINE WHEN AND HOW DISCREPANCY OCCURED AND ORGANIZATIONS INVOLVED
- EVALUATE FOR SAFETY SIGNIFICANCE
- DETERMINE ROOT CAUSE AND GENERIC IMPLICATIONS
- IDENTIFY NEW PROGRAMMATIC ISSUES THAT REQUIRE EVALUATION
- CATEGORIZE
  - INITIAL QA/QC CONTROLS OK
  - INITIAL QA/QC CONTROLS NOT OK

inspection disciplines? But to try to bound the issues so that we can attack specifics rather than just going out in a gross fashion and doing a lot of inspection.

The Hardware flow plans are based on, or built based on that premise, but we will be continually trying to zero in on the real root cause or causes, and then going out for the solution of those.

We will also be evaluating discrepancies for safety significance, and we will be trying to -- we will be quantifying discrepancies,rather than talk about a certain percent of welds being defective, we are going to talk about how defective. We'll we talking two inches of defective welds out of ten inches, or two inches out of a hundred, or two inches out of five hundred. How many inspections were processed.

So, we will be trying to quantify to better understand each of the Hardware discrepancies and issues that have either been surfaced, or that we surfaced.

We plan to spend extensive time involved in the review for the root causes, and the definition of any generic implications.

This is the categorization that I talked about of the QC efforts. Was the initial

inspection okay or not okay, or did the system break down subsequent to that point in time. And we will be looking at that. That is a part of the bounding to try to zero in.

(Copy of viewgraph No. 5 follows and is made a part of the record.)

MR. HANSEL: This is a continuation of the previous chart. If, in fact, it's been disturbed since its initital inspection there are a number of things that might have to be considered. Either some special inspection to go look for like Hardware. A powder fuse is a good example. Jam nuts is a good example.

There may be some special tests required. We certainly would want to define some special controls, either be it on maintenance personnel or test personnel, to make certain Hardware is restored to its as-designed condition.

If we find there was a problem on the initial inspection, and acceptance of the hardware, then that opens up a whole new avenue where we may have to go out and do some reinspection of other Hardware.

(Copy of viewgraph No. 6 follows and is made a part of the record.)

MR. HANSEL: The interface with the other review team. We have been on board, John, since November,

QA/QC

CONSTRUCTION RELATED ISSUES
(IDENTIFIED ISSUES)

APPROACH - INITIAL QA/QC CONTROLS OK (DISTURBED SINCE INITIAL INSPECTION)

- DEVELOP A DETAILED CORRECTIVE ACTION PLAN

  - SPECIAL INSPECTIONS

  - SPECIAL TESTS

  - DEVELOP PROCEDURAL CONTROLS

  - RETRAINING

APPROACH - INITIAL QA/QC CONTROLS NOT OK

  - ADVANCE TO SAMPLE REINSPECTION OF HARDWARE

INTERFACE WITH OTHER REVIEW TEAMS

- EACH RTL IS CONDUCTING ANALYSES FOR
  - ROOT CAUSE(S)
  - GENERIC IMPLICATIONS

- QA/QC REVIEW TEAM INTERFACE WITH OTHER TEAMS
  - PREPARE/REVIEW INSPECTION PLANS AND INSTRUCTIONS
  - KEPT INFORMED OF ISSUE PLAN FINDINGS
  - ASSIST IN DEFINITION OF ROOT CAUSES AND GENERIC IMPLICATIONS WHEN QUALITY IS A CONSIDERATION

- MAINTAIN A TRACKING SYSTEM FOR ALL QA/QC ISSUES
  - PROGRAMMATIC VS. HARDWARE
  - ACTIONS IDENTIFIED BY OTHER REVIEW TEAMS
  - QA/QC RTL WILL REVIEW ALL SSER'S FOR QA/QC ISSUES/CONCERNS

it seems like a year ago really, but since November --

MR. BECK: '84.

MR. HANSEL: -- of '84, and we are all here on site at least part of every week, if not all week. And there is extensive interchange. We see their action plans. We see their results. They see ours. We really act as a peer group of reviewers in analyzing those to make certain they cover all aspects.

We are interested in all of the other action plans primarily from a QA/QC Programmatic standpoint. Do they in fact include all the investigations that we think need to be there from a QA/QC standpoint. And we are working with them on their analysis for root cause and generic implications.

The best evidence that we have of that to date is our interface on the electrical hardware inspections that have taken place.

We also are working with them, and the decision has been made to use independent inspectors, independent third-party inspectors for all hardware inspections, and document reviews and tests.We worked with the other review team leaders in determining who would do that work in the development of the check-list or the inspection procedures, and to train the people.In one particular case tney did use Southwest

Research Institute. We verified through an audit that that group was okay. Not that there was any question, bu we went just as an added measure of confidence and did a survey of them, along with TUGCO.

So, we are heavily involved in their action plans, their inspection procedures, the training of personnel.

We have developed a matrix, and Herb if you and Cliff have some time while you are here I'd like to show that to you, because it's a matrix that keeps track of all action plans, and it keeps track of everything we are doing, and we are monitoring the interface in terms of what action plans were issued, what results have been produced. What are the implications? Where we stand in terms of root cause determination. It's really keeping track, because when the other review team leaders, if they find something that indicates there may be more hardware to be inspected it will come back into that matrix, we'll pick it up and work with it.

If it indicates a generic problem in terms of the QA/QC procedures, it'll come back in and we'll work it in terms of the Programmatic standpoint. So, it's really a work aid and a tracking aid that we'll use, but it will keep track of all QA/QC

transactions on the program.

And, as I said, we are working with them on the root cause and generic implications and this is our tracking system.

(Copy of viewgraph No. 7 follows and is made a part of the record.)

MR. HANSEL: We feel that this approach is certainly going to help us identify any safety significant discrepancies that exists out there, whether they were caused either by Programmatic workmanship weaknesses, or if in fact there was an inspection problem.

We're going to bound those deficiences and then we'll come up with a corrective action for both the hardware and for programmatic deficiencies.

(Copy of viewgraph No. 8 follows and is made a part of the record.)

MR. HANSEL: This is a repeat of what you saw on the chart with the two blocks but it identifies the Programmatic issues that we have identified to date and we are starting to work on. The one that was not in the block chart is a training,certification and testing of inspectors, and we have been working that since last November.

(7)

APPROACH WILL ENABLE -

SRT/TUGCO TO IDENTIFY SAFETY SIGNIFICANT DEFICIENCIES,

CAUSED BY EITHER PROGRAMMATIC OR WORKMANSHIP WEAKNESSES,

BOUND THOSE DEFICIENCES AND IMPLEMENT EFFECTIVE

CORRECTIVE ACTIONS.

PROGRAMMATIC ISSUES

TRAINING/CERTIFICATION/TESTING OF INSPECTORS

NON-CONFORMANCE/DISCREPANCY REPORTING SYSTEMS

CORRECTIVE ACTION PROGRAM

REPORTABILITY PROCEDURES - 10CFR50.55(E)

QUALITY CONTROL INSPECTION

MATERIAL TRACEABILITY AND CONTROL

DOCUMENT CONTROL

AUDIT PROGRAM AND AUDITOR CERTIFICATION

MANAGEMENT ASSESSMENT/OVERVIEW OF QA/QC PROGRAM

EXIT INTERVIEWS

HOUSEKEEPING

(Copy of Viewgraph No. 9 follows and is made a part of the record.)

MR. HANSEL: And the hardware issues that we are now tracking and working.

I would now like, if there are no questions on that, to talk about each of the Action Plans and where we are at, and where we can talk specifics and talk about our planned approach on those that I just showed you this morning, except for the Inspectors certification and qualifications.

(Copy of Viewgraph No. 10 follows and is made a part of the record.)

MR. HANSEL: This issue was identified back in the first letter, I think in September, and it identified a problem in terms of the lack of supporting documentation for certification of Inspectors. And there were a number of issues and findings identified in that collection.

TUGCO at the time of the construction permit, the performance is demonstrated by the examination, and then verified by OJT. This is a bit of history.

In 1981 they committed to Reg. Guide 1.58 Rev. 1. And at that point in time about the only difference was that they did then have a requirement

CONSTRUCTION RELATED ISSUES

ASME PIPE SUPPORTS

FUEL POOL LINER

VALVE DISASSEMBLY/ASSEMBLY

FABRICATION SHOP

CABLE TRAY SUPPORTS

HILTI BOLTS

(12)

INSPECTOR
QUALIFICATION/CERTIFICATION

ISSUES:

ADEQUACY OF SUPPORTIVE DOCUMENTATION REGARDING PERSONNEL QUALIFICATIONS IN TRAINING/CERTIFICATION FILES.

BACKGROUND:

- AT TIME OF CP, TUGCO WAS COMMITTED TO 10 CFR 50 APP.B.
    - PERFORMANCE DEMONSTRATED BY EXAMINATION, VERIFIED BY OJT
    - 1981 - COMMITTED TO REG. GUIDE 1.58 REV. 1
    - SAME AS ABOVE PLUS VERIFICATION OF EDUCATION/EXPERIENCE

-INSPECTORS TRAINED AND CERTIFIED TO SPECIFIC PROCEDURES/INSTRUCTIONS

- EACH INSPECTOR MAY HOLD MULTIPLE CERTIFICATION

or verification of educational experience in the files. They did not go back and backfit or go back and catch up their records.

The TUGCO process is a bit different in that rather than certifying Inspectors by discipline they are certified by procedure or by instruction. In other words, rather than having an electrical inspector you may have an electrical inspector that's certified in two to fifteen or twenty different procedures. The same thing with mechanical inspectors, civil inspectors, and so forth.

So, the records problem was quite extensive, in that a lot of the records from certification file to certification file did not match. You may have some material in one file and not be in another, or it may be back in some corporate file, but there was a lot of problems in terms of records.

And, I think that's what the TRT saw.

(Copy of Viewgraph No. 11 follows and is made a part of the record.)

MR. HANSEL: To get at this the TUGCO Audit Group reviewed training,qualification, certification, recertification files for "All electrical inspectors, both current and past."

ACTION - PHASE I

- TUGCO AUDIT GROUP REVIEWED TRAINING, QUALIFICATION, CERTIFICATION, RECERTIFICATION FILES FOR:
  - ALL ELECTRICAL INSPECTORS (CURRENT AND PAST)
  - NON-ASME INSPECTORS (CURRENT)
  - ASME INSPECTORS (CURRENT)
    - RECENT DECISION BASED ON NRC LETTER DATED 1/8/85
    - CONDUCTED BY INDEPENDENT SPECIAL EVALUATION TEAM (SET)
- RESULTS
  - TUGCO AUDIT REVIEWED FILES FOR:
    - 215 INSPECTORS
    - 2386 CERTIFICATIONS
    - CERTIFICATION SUMMARY FORMS PREPARED FOR EACH INSPECTOR
    - EFFORT WAS AUDITED BY SET
  - TO BE REVIEWED BY SET
    - 133 INSPECTORS
    - 270 CERTIFICATIONS

And they reviewed current non-ASME inspectors files. And that was the initial effort.

Subsequent to the receipt of the January letter we made the decision to go back and look at the current ASME Inspectors files. And that's in work now.

And that's being done, whereas the first two bullets, all of that going to current non-ASME were done with TAG and audited by a special evaluations team which reports in to me made up of independent people. Rather than have the TAG group, the Texas Audit Group go back and review these ASME current inspectors, the special evaluation team members were on site and they are doing that review for me.

The results of that review, and I do not have reflected in here the results of the ASME review. That's still in working. It should be completed by the end of this week, I would think, maybe next week.

TUGCO Audit reviewed the files for 215 inspectors, and that included 2386 certifications for those folks. There was a form prepared, and that was a go-no-go type of decision. They did not make any judgment calls. Either the records were there, or they were not there. It was purely go-no-go. No judgment

calls.

There was a form filled out for each of those reviews as to how they got to their decision. As I say, we went down and audited that particular effort.

That resulted in 133 Inspectors and 270 certifications where there was some question when they made their review.

(Copy Viewgraph No. 12 follows and is made a part of the record.)

MR. HANSEL: The criteria for that Special Evaluation Team is that they had to be independent, minimum five years management, supervisory QA/QC experience, and that they conducted a detailed review of each file. And they would actually look to determine these kinds of things.

The biggest effort here was that they were looking for consistent application of the criteria when you make a judgment on related experience. What is related experience? And that can always get into a matter of interpretation.

TUGCO prepared a memorandum that they felt identified their feelings on it. We look at that and concurred with it, and then we used that in this evaluation.

(12)

ACTION PLAN - PHASE II

- SPECIAL EVALUATION TEAM
  - INDEPENDENT
  - MINIMUM 5 YEARS MANAGEMENT/SUPERVISORY QA/QC EXPERIENCE
  - CONDUCTED A DETAILED REVIEW OF EACH FILE

-SET REVIEW TO DETERMINE

  - EXPERIENCE
  - EDUCATION
  - FORMAL TRAINING AT CPSES
  - OJT
  - RESULTS OF WRITTEN EXAMINATIONS
  - OTHER VALID CERTIFICATIONS IN RELATED AREAS
  - CONSISTENT APPLICATION OF CRITERIA FOR EVALUATING RELATED EXPERIENCE
  - RESULTS DOCUMENTED FOR EACH INSPECTOR CERTIFICATION, FILES UPDATED

We, again, in the SET evaluation maintained a form for each file that we looked at. That documented our findings, any concerns, and any records that needed to be cleaned up and corrected.

(Copy of Viewgraph No. 13 follows and is made a part of the record.)

MR. HANSEL: This data is about to be updated. I didn't want to throw in new data until I totally evaluated it, which I have not done as yet. But this is the data that we showed the Contention 5 Panel and it has not changed a whole lot from this point until the final report is released. I do not have on here the ASME people. We'll put that on when we finish that review, the current ASME records we are reviewing.

Out of 133, 114 needed some piece of update information. And I have to say that TUGCO has really a super job on going back and cleaning up records. It may be verifying that a fellow graduated. That somebody had passed a GED test. There may have been an inconsistency between an application and a resume in terms of dates of employment. One of the other of those may have been vague in terms of who their employer was, what kind of work they did. And TUGCO has gone back by phone and in writing and verified past employment, past applicable experience, education, past

ACTION PLAN - PHASE II

CATEGORY	REQUIRE RECORDS UPDATE	FURTHER EVALUATION REQUIRED	QUESTIONABLE QUALIFICATIONS	TOTAL
CURRENT ELECTRICAL	25	3	-	28
CURRENT OTHER DISCIPLINES	38	-	-	38
CURRENT LEVEL III	15	1	1	17
HISTORICAL ELECTRICAL	36	1	13	50
TOTAL	114	5	14	133

certification. And most of these, probably ninety-nine percent if not all of them are cleaned up now to where they've actually gone back and gotten that.

We ran into situations where a fellow had died and we had a hard time getting those records.

We also ended up in another case where the high school had burned, and all of the records were gone. We tracked down the principal of the high school, who was in place at that time when that fellow was in high school.

So, there's been a lot of effort gone into cleaning up of these records. Right now we are looking at a population of somewhere in the neighborhood of fourteen people whose certifications are in question. Well, that may not be all certifications that they had, but it may be certain procedures that are questionable.

(Copy of Viewgraph No. 14 follows and is made a part of the record.)

MR. HANSEL: In that particular case we are going to Phase III on those 14, if in fact they stay in that population.

We are going to look -- and this has been done -- to look for any safety-related work

ACTION PLAN - PHASE III

DETAILED EVALUATION OF QUESTIONABLE QUALIFICATIONS

- DETERMINE SAFETY RELATED WORK ACCOMPLISHED BY EACH INSPECTOR IN CHRONOLOGICAL ORDER.

- IS IT STILL ACCESSIBLE, UNDISTURBED AND RECREATABLE?

- DEFINE WORK ACCOMPLISHED IN FIRST 90 DAYS.

- REINSPECT WORK
  - USE THIRD PARTY INSPECTORS (ERC)
  - INSPECT USING ORIGINAL CRITERIA

- EVALUATE RESULTS
  - OBJECTIVE - 95% AGREEMENT
  - SUBJECTIVE - 90% AGREEMENT

- IF INSPECTOR FAILS CRITERIA - INPUT NEXT 90 DAYS EFFORT
  - EVALUATE TO SAME CRITERIA

- IF INSPECTOR FAILS - REINSPECT ALL REMAINING WORK

- INSPECTORS WHO DO NOT HAVE A SUFFICIENT NUMBER OF INSPECTIONS
  - EVALUATE WORK FOR SAFETY SIGNIFICANCE
  - IDENTIFY SUBSEQUENT INSPECTIONS THAT CAN VALIDATE RESULTS
  - PERFORM OTHER TESTS OR INSPECTIONS
  - DOCUMENT HOW EACH CASE IS DISPOSITIONED

that was accomplished by those Inspectors, and in chronological order from the date of certification.

We are then making a determination was that work recreatable. In other words, if you went out and ran some voltage tests it may not be recreatable. It may not be repeatable. If you pulled a cable, you certainly can't repull that cable to determine if that Inspector did a good job.

Is it still accessible? Has it been covered up with insulation, or buried in concrete, et cetera? Can we still get to it, and is it still in its same original state, is the question to be answered there.

We then will take the first 90 days of efforts of that Inspector's work, and we'd like to have a minimum sample size of 50 pieces of hardware to reinspect. The plan then is to reinspect that work to the same criteria that that person used on the first inspection. That's very key, because we're really evaluating the effectiveness of that Inspector as certified in 1979, 1980, or whenever it was. So, we're going to go back and reinspect the work with the same criteria, and look for the agreement rate between the first inspector and the reinspection.

On objective kinds of things that

should not change or should not be open to interpretation we are looking for a 95 percent or better agreement rate.

If, in fact, they do agree in 95 percent of the cases or better, then we are going to say that that person must have been properly qualified.

In terms of subjective the clip rate is set at 90 percent. I have used those on a past program and they seem to be a pretty good threshold level for determining the acceptability of Inspectors.

MR. CALVO: You said that the work accomplished for this Inspector possibly would be determined not to be unqualified.But for the first 90 days of the work that you inspected it. And you say you selected randomly 50 pieces of equipment. Why the 50 pieces of equipment?

MR. HANSEL: No. I took every inspection that he did the first 90 days of effort.

MR. CALVO: Okay.

MR. HANSEL: After he was certified here, I took everything that he did, --

MR. CALVO: Everything.

MR. HANSEL: -- that was still accessible and still in that same original state, and it was recreatable, and I inspected that. I didn't select at

random. I took everything that that Inspector did.

MR. CALVO: Okay.

MR. HANSEL: Okay? And that's based upon the assumption that if that person was unqualified he most likely would have made a mistake in the first 90 days, early on, early in the period of employment.

I'd like to have a minimum sample of 50 items to look at. If I don't, we're going to go beyond the 90 days until we get 50. Now, what we have found was that in some of these cases some of these fellows just weren't around long enough. They might have had 15 or 20 inspections. I think we had one that had 18. And some of those were not accessible or recreatable. We are going to have to inspect everything that that person did.

So, of those 14 we are going to have to attack them differently. I would like to be able to evaluate their work to be able to say the certification process was okay or not okay. I may not have enough data to do that, because a lot of these people were involved in cable pulls not creatable.

MR. HALE: John, I guess I missed something back on that table where you got the 14 from. There's five on there that you indicate there's further evaluation required. And if you explained that, I

missed it.

MR. HANSEL: I didn't. We're still looking at these five in terms of records update. They may go from here to here, or they may go from here to here. Still five in that particular category.

MR. HALE: Fourteen could go up with --

MR. HANSEL: Fourteen could go up.

MR. HALE: All right.

MR. HANSEL: And it may go up depending on what I find in the ASME, current ASME people.

MR. LIVERMORE: I noticed in that same chart you talk about historical electrical and you don't say anything about historical other disciplines.

MR. HANSEL: Because we did not do, Herb, any historical other disciplines. We looked at current ASME.

MR. LIVERMORE: Yes.

MR. HANSEL: Or current ASME, or current non-ASME. Okay?

MR. LIVERMORE: Okay. Current everything, and historical just in electrical?

MR. HANSEL: Yes.

MR. LIVERMORE: Okay. Why wouldn't you do historical in the other disciplines? Any reason for that?

MR. HANSEL: Well, we talked about that, and we want to see how this data turns out. If in fact we find -- we may end up doing that, if in fact we find that the data here says that the program was working, then I'd say that we might -- and the hardware that we inspect appears to be okay, then, as I say, we may have enough rationale to close that one out.

If in fact we find that these 14, we find major problems there or we find major problems in some of the other hardware that get us back into those historical people, we may have to go open this up and go back. Right now that's not the plan.

MR. LIVERMORE: What led you to do historical in electrical? Was there --

MR. HANSEL: Initially we had in the letter, in the early letter from the TRT we saw a lot of historical kinds of problems indicated in that letter, all electrical, and that led us in that direction.

Now, the January 8 letter, the initial look at that tells us that a lot of that is ASME. That's what led me to go look at the current ASME Program.

And, also, the first indication is that a lot of the problems that you fellows found

there are indicative of problems subsequent to the initial inspection. We're not totally finished with that evaluation, but at least there are a lot of indications in that area.

We could end up going back looking at the historical non-ASME, but I don't want to say that yet. I want to see how the results come out.

MR. LIVERMORE: All right.

MR. HANSEL: Now, if that Inspector passes that first 90 days, then I'd say we probably had a good inspector and the program was okay, at least in his case.

If he fails that first 90 days we'll go beyond that. We'll go for another 90 days and another minimum sample size of 50 and look at that. Take the results of those in the aggregate, and then if he passes, fine, and if not then we want to reinspect everything that he did.

MR. LIVERMORE: Let me interrupt again and ask you: This 90 days is there some precedent for that? Why'd you pick 90? Just out of thin air, or --

MR. HANSEL: I did that at Byron. It seemed to be a good time period. Now, the problem that I'm finding here, the population of work accomplished in the first 90 days that was accessible and recreatable

was a lot larger. And the 14 people or 14 cases that we're looking at here first, I'm not finding that much work to look at. A lot of those people were not around very long, so we're probably going to end up looking at everything they did.

We're also having a situation where a lot of that work is no longer accessible, and in many cases not recreatable. What I'm going to have to do there -- and I've also found this situation here that I did not find at Byron, nor am I finding at Gregwood. There have been so many subsequent reinspections here on a lot of the electrical work and a lot of the cable tray hanger work that I may have to go back and determine the acceptability of that inspector's work based upon some of those subsequent inspections. But that gets me back into whether that person who did the subsequent inspection was properly certified.

We are going to have to do a detailed search of the 14 and each one is probably going to be -- the conclusion we reach will be based upon a number of avenues. Either reinspection of the work, looking at the results of subsequent inspections, subsequent tests, or maybe we'll have to go back out and do some other inspections now. So, there's a number of ways we are going to have to look at this. The populations,

they are not big. And for the most part they are not safety significant.

What I'm finding in the case of the electrical inspectors is a lot of conduit runs for inspections routing, clamping, bends.

We have had, one individual we are looking at for terminations, but we had nobody in terms of butt splices, crimping. It's all terminations and conduit routing right now.

MR. PRATT: You're looking at a hundred percent of the terminations?

MR. HANSEL: Yes. That's right.

MR. CALVO: I guess I'm having the same feeling that Herb has. This 90 days could be misleading, you know. For the first 90 days you are assuming if the same inspector continues to do work that he has up to that time he has been trained pretty good for the 90 days, and after that all the work that gets done is all right. In other words, how can you go to that transition point of 90 days after that it is okay to do whatever he does next? So I don't know if your 90 days is a fixed time, or something depending on what you're finding in the early 90 days whether you are going to continue following up with the 90 days.

MR. HANSEL: Well, again, if you're bent

trained, and certified, and you now go to work, you should be in good shape. I see no reason why your performance would degrade after 90 days. The 90 days is an arbitrary number. I've used it once and it proved to be rather successful. And it's arbitrary. But if a person is likely to make a mistake, it's going to early on. And I just picked 90 days.

Again, he's been freshly trained indoctrinated on site, tested, OJT. He's certified; he's now inspecting. He should be pretty well up to snuff.

MR. CALVO: What I'm saying, you've got to correlate Comanche Peak to whatever the 90 days in other plants are. If all of the things remain constant, then I agree with you. But if your training at Comanche Peak was not as good as it was at Bryon, or some other plant, then the 90 days doesn't hold true in here, because it's all predicated on whether you can have a one-to-one relationship with the same kind of plant and the same kind of conditions in other plants. That's all I'm saying.

MR. HANSEL: To address that Jose -- I think I agree with what you're saying.

MR. CALVO: Okay.

MR. HANSEL: I reviewed the complete

history of all the changes and improvements to the qualification, training, certification process, procedurally. I didn't go back and look at implementation, except for review of the certification process.

But I did find continual improvement being made in those systems. I think there were 18 revisions to those procedures for certification from about 1978 until now, and every one was an improvement. So, if anything, the process should have been getting better.

Okay. So, I'm down to the point that if the person fails that second 90 days of work then we would go reinspect everything. But, as I indicate here, we are not finding that much to inspect. We are probably doing a hundred percent of everything that's accessible, and looking at other results. If they did fail we are going to be looking for the safety significance of the work, and then that could have, which I think gets to be your concern, that could have some generic implications, possibly, that said we could have had a problem in other parts of the training/certification process, which could lead us to some other work.

This is the subsequent inspection and may validate results which we end up doing some

testing. I don't see it yet. And we would document each case, and how we disposition it.

MR. CALVO: Excuse me.

MR. HANSEL: Yes.

MR. CALVO: When you say that you're going to validate the work for the safety significance, could you elaborate a little bit on that? What did you have in mind on that?

MR. HANSEL: We will take the work, the attributes that that inspector failed, and let's say it was bending or verification of a conduit run, I really would not consider that safety significance,unless it was in the clamping and clamping arrangements.

We'd be talking to the other Review Team Leaders and having them make a judgment for us as to whether or not the attributes, if it were to be missed or failed could have any significance on safety.

So, I would be talking to Martin Jones, for instance, and saying, "Martin, what do you think?"

Now, in the case of the terminations, if we were to find a problem in terminations, I suspect in certain circuits we may have a safety significance issue. Hopefully, we don't find that. But it could

work out.

So, it's that type of review, to take each discrepancy, look at it for safety significance, what was the attribute, get back with the other Review Team Leaders and have them come back and tell me it can be safety significant or not safety significant, and then we have to take it from there. If it's not, then I'd say were okay. If it does have safety significance, then we may have to go look for some other hardware, other inspectors. But I'll bite that bullet when we get to it.

(Copy of Viewgraph No. 15 follows and is made a part of the record.)

MR. HANSEL: There are some other things that are taking place, and they weren't triggered strictly by ourselves. I don't even know that they were triggered by TRT. But we are providing on a continuing basis, and it's being documented, to TUGCO a series of recommendations on improvements for their procedures, further improvements and enhancements, for both certification procedures, their files, their testing procedures, and controls. And they have been very agreeable to discussing those and accepting them.

They are in the process of having a computerized system built for tracking all of their

RELATED ACTIONS

- RTL PROVIDE RECOMMENDATIONS ON IMPROVEMENTS TO CURRENT PROCEDURES
    - CERTIFICATION PROCEDURES
    - CERTIFICATE FILES
    - TESTING PROCEDURES & CONTROLS
- COMPUTERIZED SYSTEM FOR TRACKING ALL CERTIFICATION/RECERTIFICATION ACTIONS
- NEW APPROACH TO INSPECTOR TESTING
    - BANKS OF QUESTIONS BEING DEVELOPED BY DISCIPLINE
    - QUESTIONS CAN BE SCRAMBLED
    - SYSTEM OPERATIONAL BY MID APRIL
    - TRAIN TUGCO QE'S ON HOW TO TRAIN INSPECTORS MORE EFFECTIVELY
- INSPECTION PROCESS CONTROL SYSTEM
    - EVALUATE INSPECTION ACTIVITIES, STUDY RESULTS, RECOMMEND IMPROVEMENTS
    - INSPECTION RESULTS TRENDED TO IDENTIFY WEAKNESSES
    - RESULTS TRENDED TO IDENTIFY CAUSE OF DISCREPANCY - IDENTIFY PREVENTIVE ACTIONS

SUMMARY

APPROACH WILL

- ENABLE SRT/TUGCO TO IDENTIFY WEAKNESSES IN CERTIFICATION PROCESS
- IDENTIFY INSPECTORS WITH QUESTIONABLE CERTIFICATIONS
- EVALUATE WORK PERFORMED BY THESE INSPECTORS TO ASSESS FOR SAFETY SIGNIFICANCE
- RECOMMEND IMPROVEMENTS FOR CERTIFICATION PROGRAM

certification and recertification actions. That's well on its way. Project Assistance Corporation is doing it for them. They are developing a new approach to the certification and testing of inspectors. They are developing banks of questions and they will test inspectors by discipline as well as by procedure.

So, they would give -- and I don't know that these are the numbers. They may have a bank of 80 questions for electrical inspectors. And they would certify -- and they could scramble those by a random number generally, and scramble the questions and certify those inspectors. And then also certify them by procedure.

So, that's an outstanding system.

The last item we normally hear about the process control on manufacturing processing, but they are studying the inspection process. They are taking a lot of data on various inspections that are being performed, and they are plotting that in terms of trend charts. And they are looking for two things: What kinds of errors TUGCO will go inspect, and then it's inspected by a PAC person, Project Assistance Corporation person. They evaluate the results.

Now, let's say that the first inspector made a high number of bad judgments on

crimping, or on butt splices, or on cable routing, or wire harness dressing, or whatever. Then they have some indicators of where their process can be improved.

They may go back and retrain people. They may develop some inspection aids. They may rewrite some procedures. But they would upgrade their system for improving the inspection activity.

They also are going to look at what caused the discrepancy in the beginning on behalf of the craft. So, they are looking at process control improvement, process improvement, and also the inspection.

MR. CALVO: Let me ask a question. Here you are looking forwards. You say, --

MR. HANSEL: Yes, sir.

MR. CALVO: -- "Well, this is what we have. This is what we're going to do, because I can't find some weakness, or because I'm going to make it better."

MR. HANSEL: This is all forward.

MR. CALVO: Right. Are you going to consider the fact that you ought to look backwards and see his weakness, that you find out what impact it has on the safety of the plant because of poor training or because of not the right kind of training? Are you

going to consider that in your action plan?

MR. HANSEL: I think, Jose, we are going to get at that two ways. One is we are looking at the certification program.

Now, as we look at hardware in our hardware issues, and as the other Review Team Leaders look at the hardware and they find problems -- for instance, in the case of electrical area, Martin Jones, who you have worked with, Martin has found some problems. He's feeding that information to us. We'll be going back and looking at the training and certification specifically in those areas where those attributes are, because that could tell us there may be other problems.

In his particular case he's rapidly advancing to close to a hundred percent inspection in some of those cases.

But, yes, to answer your question. All of the data concerning QA/QC will come back to us and we'll look at it on a collective basis, and from a collective standpoint, which would include also going back here, if need be. But only if we see problems. Again, I'm trying to bound it, and not go back in a blanket fashion. So, it may well bounce back.

MR. LIVERMORE: Do you consider this PAC

effort in the area as one of your separate action plans; is that what you --

MR. HANSEL: No. That's a TUGCO effort, Herb. I just brought it up to let you know that something is being done. We're watching it. It's not an action plan. We can get you the information on it, as to what's happening there, what's being done.

MR. LIVERMORE: Has there been a published action plan by this group, with details, what their aims are, and their goals, and --

MR. HANSEL: It's not an --

MR. LIVERMORE: -- details.

MR. HANSEL: -- action plan like we have on the TRT, but they do have a plan for it, yes, and their goals, and the actual approach. We can get that for you. In fact, I'll do that. Are you going to be here today and tomorrow?

MR. LIVERMORE: Yes.

MR. HANSEL: Okay. We'll get you that information.

MR. LIVERMORE: I guess I see this and I kind of wonder, well, how many other little side efforts are going on we don't know about. You know, right to now we always thought your group was the one handling all quality, and recertifications, and testing.

And now all of a sudden I find there's another group in here that's reporting to someone else, doing a separate effort, although they are dotted line to you, as you say. How many other groups are floating around we don't hear about doing this type thing?

MR. HANSEL: In the training and certification area this is all the efforts that I'm aware of.

MR. LIVERMORE: How about in the quality area?

MR. HANSEL: When we get in the other areas, then I'll be addressing those individually.

MR. LIVERMORE: Okay.

MR. HALE: John, this may be a good time to ask you a similar question that I had earlier.

Your TAG, you call TAG, TUGCO Audit Group.

MR. HANSEL: Yes.

MR. HALE: And about a few moments later you talked about a --

MR. HANSEL: SET Team?

MR. HALE: Yes.

MR. HANSEL: Special Evaluation Team.

MR. HALE: Those are two different --

MR. HANSEL: Two different groups.

MR. HALE: Okay. What are they?

MR. HANSEL: The TAG Group worked Phase I. That was the first review. And that was a go-no-go kind of a thing. Okay. The records were either there, or they weren't there. They made no judgment call.

The second group is independent third-party people reporting to me.

MR. HALE: And the first group was Utility personnel?

MR. HANSEL: That was really sort of before I came on board. Now, I did take the SEC people and go back and audit what the TAG did, just to satisfy my ownself.

MR. HALE: Okay.

MR. HANSEL: Any other questions on training/certification?

MR. LIVERMORE: Numberswise how was the SET Group? Did you mention that?

MR. HANSEL: Three people.

MR. LIVERMORE: Three people, and your group was how many?

MR. HANSEL: Right now it varies. Today we have about 30 people on board of different disciplines. Some engineers, quality engineers and inspectors.

MR. LIVERMORE: You have a breakdown, I

assume, somewhere of that?

MR. HANSEL: Yes. I'll show you that later.

MR. LIVERMORE: All right.

MR. GAGLIARDO: My name is Jim Gagliardo.

Going back to the question Herb asked you about the fact that only in the electrical area had you really looked at the past QC inspectors' qualifications, it appears that the historical electrical QC inspectors are the one that you had the most hits on.

I would wonder how that impacts on your decision now to look at some of the past non-ASME and then the past ASME inspectors?

MR. HANSEL: Again, Jim, I want to take this in pieces. The first letter that I got or that we had back in the fall in the QA/QC area primarily dealt with electrical inspectors, so we went after that population first.

We also decided, as a prudent measure, to look at the current on board non-ASME types.

I don't know yet if there's a problem there. When I finish this program, hopefully in about two weeks, I'm going to know, because I'll be finished with the inspections and I'll be finished with

all the document review, and I'll know if they had unqualified inspectors out there, at least based on this program.

Now, we received the January 8 letter, and it talks about a lot of ASME issues and some non-ASME issues. It's a little difficult to sort out just yet.

Before I go jumping in to look at those past non-ASME and those past ASME folk, I would like to wait and see what the hardware tells me because to me the proof of the pudding is in the hardware.

If I find the hardware is in good shape, then I can get that back to the initial inspection again. I want to start out from the initial inspection, what happened subsequent to that.

If I see that the hardware was in good shape at the initial inspection, then it's going to tell me that the inspectors were okay, properly certified.

If I find problems there, then I'm going to have to go back and look at all of them and take the same approach we have taken on the historical electricals; but I want to take it step by step.

None of these action plans should you consider that they are totally -- you know, they are going to close someplace, sometime; but they can all be opened up to look for new things as we need to.

But as part of my bounding technique, I just don't believe in going out and doing a whole lot of work, if I don't have reason to do that, and I would like to have something that tells me I need to go look back there first. And my own knowledge of what we have so far doesn't tell me that.

It may next week, but now it doesn't.

MR. GAGLIARDO: The other question I had had to do with the new approach to the inspector testing, and you talked about the approaches that were being taken to improve that.

I was listening for it, but I didn't hear the good words to indicate that that's also going to apply to the QC inspectors that will be involved with the operations phase of Unit 1.

Is that a fact or is that only construction inspectors?

MR. HANSEL: Bill can you answer that

for me.

MR. CLEMENTS: Bill Clements, TUGCO.

Jim, we have a completely different training program from the QC inspectors for construction. I'll be glad to sit with you and show you that.

Your inspectors over the past six or seven years have looked at that and approved it, but I'll be glad to get with you and talk to you about it.

Dennis Kelley is here. He may have some comments.

MR. HANSEL: As a part of that, Jim, just this past week, the Senior Review Team told us, directed us Review Team leaders in all of our reviews to, as we go through, if we see implications that we need to go look at the operations phase, to do that.

Somewhere downstream I would suspect that we'll be looking at that program as well.

MR. GAGLIARDO: I would think you would want to.

MR. HANSEL: And to definitely look at Unit 2.

MR. PHILLIPS: I have a similar question. Shannon Phillips with the NRC. I have a

similar question to the one Jim had. Maybe it goes one step further, and that is as it relates to the certification of electrical.

The electrical comes toward the end of the project, and you stated that '78 forward there was continuous improvement in the certifications of inspectors 45.26 in the procedures.

However, if you don't look at ASME history and non-ASME history, it appears that you are looking at the improved side of the picture rather than a representative.

MR. HANSEL: Was it Shannon?

MR. PHILLIPS: Shannon.

MR. HANSELL: Again, I may get there, but I want to see what the hardware tells me first.

I may get there, but I don't know that I need to go back there yet. Prior to '78, an awful lot of the work was concrete and steel, and I can't get to it.

Most of the piping, however, was done subsequent to that point in time, so I don't have a whole lot to look at there.

MR. CALVO: But I think you are saying, If I look at the electricals, it's going to provide me with an insight whether I should go to the

other disciplines.

I feel that the electrical is the discipline that you can -- I think you can easily verify with respect to the others whether the initial kind of work was done correctly.

You know, maybe everything is visual. Normally, it's not hidden by cables and you can follow through with it.

Maybe you can prove the case with the electrical. Maybe with the mechanical or the concrete or the civil, that's very difficult, because it is already hiding. There's something else in there on top of it.

So the results of the electrical, I think it would be difficult to correlate it.

MR. HANSEL: Plus the hardware. We are going to be looking at a fairly significant amount of hardware as we go through and research the QA/QC issues.

That may tell me I had a certification problem. If I do, then we'll have to glance into this.

MR. CALVO: Well, I think it's something you should consider.

MR. HANSEL: Yes, there's not a direct

correlation between the electrical discipline and the civil and mechanical and structural.

MR. CALVO: That's correct.

MR. HANSEL: But the training program -- the certification program, not specifically the training, but the certification program, elements and disciplines, should be pretty close.

But the real proof to me is going to be in the hardware.

Any other questions?

(No response.)

MR. HANSEL: Okay. What I have done now, I am going to be discussing programmatic issues, and I have working with me Jon Christensen, who will be helping me to keep track of and work all of the programmatic issues.

And I have Vic Hoffman with us who will be helping us to track and work all of the hardware issues.

To be sure that I interpreted the letter properly, since we did not have the SSER yet, to be sure that I had a feeling for what were the problems we were trying to solve, I have worked up a series of questions on each of these issues, and then I have developed a program to try to solve

those questions, provide the answers to those questions.

Now, as we go through this this morning, if I have misread the January letter and the implications, then I need to have some feedback, because we are heading downstream now to start trying to solve these problems.

There are a series of these. I am going to take these two questions and then we are going to talk about how we are going to go about solving those.

(Copy of Viewgraph No. 16 follows and is made a part of the record.)

MR. HANSEL: Was the QA/AC Program, as implemented, adequate to assure that the installed hardware will perform its designated functions without adversely affecting the safety of the plant?

Secondly, is the current QA/QC Program successful in identifying quality programs and achieving the implementation of corrective and preventive measures in a timely manner?

Then we talk about how we are going to effect that. It is twofold. As we go through this process, we are going to have input into

KEY QUESTIONS ADDRESSED

IN ACTION PLANS

QA/QC PROGRAM

1. WAS THE QA/QC PROGRAM, AS IMPLEMENTED, ADEQUATE TO ASSURE THAT THE INSTALLED HARDWARE WILL PERFORM ITS DESIGNATED FUNCTIONS WITHOUT ADVERSELY AFFECTING THE SAFETY OF THE PLANT?
2. IS THE CURRENT QA/QC PROGRAM SUCCESSFUL IN IDENTIFYING QUALITY PROBLEMS AND ACHIEVING THE IMPLEMENTATION OF CORRECTIVE AND PREVENTIVE MEASURES IN A TIMELY MANNER.

QA/QC Team from three sources.

The first ones will be the programmatic issues that we're looking at. There may be some implications fall out of there, either for the past or for the future.

We'll also have some that come out of the hardware issue, the center block, and we have already seen some come out of the electrical area, and we may well be receiving some from the other review team leaders, civil and mechanical, structural, electrical I&C, coatings, startup testing.

And there may be some come out now from the design adequacy effort that is being taken on by Howard Levin.

So we will be feeding into this three ways. There will be an issue plan written for this, and it will probably be the last one closed, because I see this as an iterative process where items are coming in and items are going out, issues are coming in and recommendations are going out.

So I see this one being open for a long time, but it will be the final wrap-up and should provide us with some kind of a conclusion as to the adequacy of the QA/QC Program, either for the entire period or by segments.

So we are going to take the results of everything that comes out of the top three boxes.

(A copy of Viewgraph No. 17 follows and is made a part of the record.)

MR. HANSEL: We are going to be looking at it from the adequacy of the QA/QC Program.

If we need additional information, yes, we're going to go get it and recycle back and start through it. If not, we are going to advance over here, and we are going to be looking at the current program, the procedures and controls in place today.

Are they adequate? "Yes," we will write a close-out statement and compare it to the final wrap-up summary.

"No," we'll make the recommendations for Unit 1 and Unit 2, and Jose, to get back to your point, this will also include anything that we might see at the operational testing program.

We'll also be looking at hardware for any generic issues that might come out of that. That can range a number of ways. It could range into processes, it could range into craft; it

FINAL OVERALL EVALUATION OF QA/QC PROGRAM

RESULTS OF INDIVIDUAL QA / QC PROGRAM EVALUATION

- QC INSPECTION
- AUDIT PROGRAM
- DEFICIENCY REPORTING
- 50.55e REPORTING
- MANAGEMENT ASSESSMENT
- MATERIAL TRACEABILITY AND CONTROL
- DOCUMENT CONTROL
- CORRECTIVE ACTION
- HOUSEKEEPING
- EXIT INTERVIEWS
- TRAINING CERTIFICATION OF INSPECTORS

INDIVIDUAL QA / QC HARDWARE EVALUATION RESULTS

- FAB SHOP
- VALVE DISASSEMBLY
- PIPE SUPPORTS
- HILTI BOLT INSTL'N
- ELECTRICAL SUPPORTS
- FUEL POOL LINER

RESULTS FROM OTHER REVIEW TEAM EVALUATIONS

- CIVIL / MECHANICAL
- DESIGN ADEQUACY
- TESTING PROGRAMS
- ELECT/ INSTRUMENTATION
- PROTECTIVE COATINGS

EVALUATION OF ALL REVIEW TEAM RESULTS AS RELATED TO OVERALL ADEQUACY OF QA / QC PROGRAM

ADDITIONAL INFORMATION REQUIRED

YES → **COLLECT ADDITIONAL INFORMATION**

NO

CURRENT QA/QC PROGRAM ADEQUATE

NO → **RECOMMEND UPGRADES/ IMPROVEMENTS UNITS 1 & 2**

YES

ADDITIONAL HARDWARE/ GENERIC ISSUE EVALUATION REQUIRED

YES → **CONDUCT ADDITIONAL EVALUATIONS UNITS 1 & 2**

NO

PREPARE ACTION PLAN RESULTS REPORT ON OVERALL QA/QC PROGRAM

- Identify root causes and generic implications of deficiencies.
- Impact on the hardware and safety of Units 1 and 2.
- Corrective action required including recommendations to preclude similar occurrences in the future.
- Justification for all conclusions.

could range into buildings; it could range into various attributes. We just don't know.

It may tell us that we have to go do some additional evaluations, either in Unit 1 or in Unit 2, hardware inspections or past programmatic type things.

The results of all that, then, will be fed into a summary report where we are going to be looking at the root causes and generic implications.

I didn't mean to give you a reading examination with that small fine print.

What is the impact of the hardware and safety in Unit 1 and Unit 2?

What corrective actions are required, including recommendations?

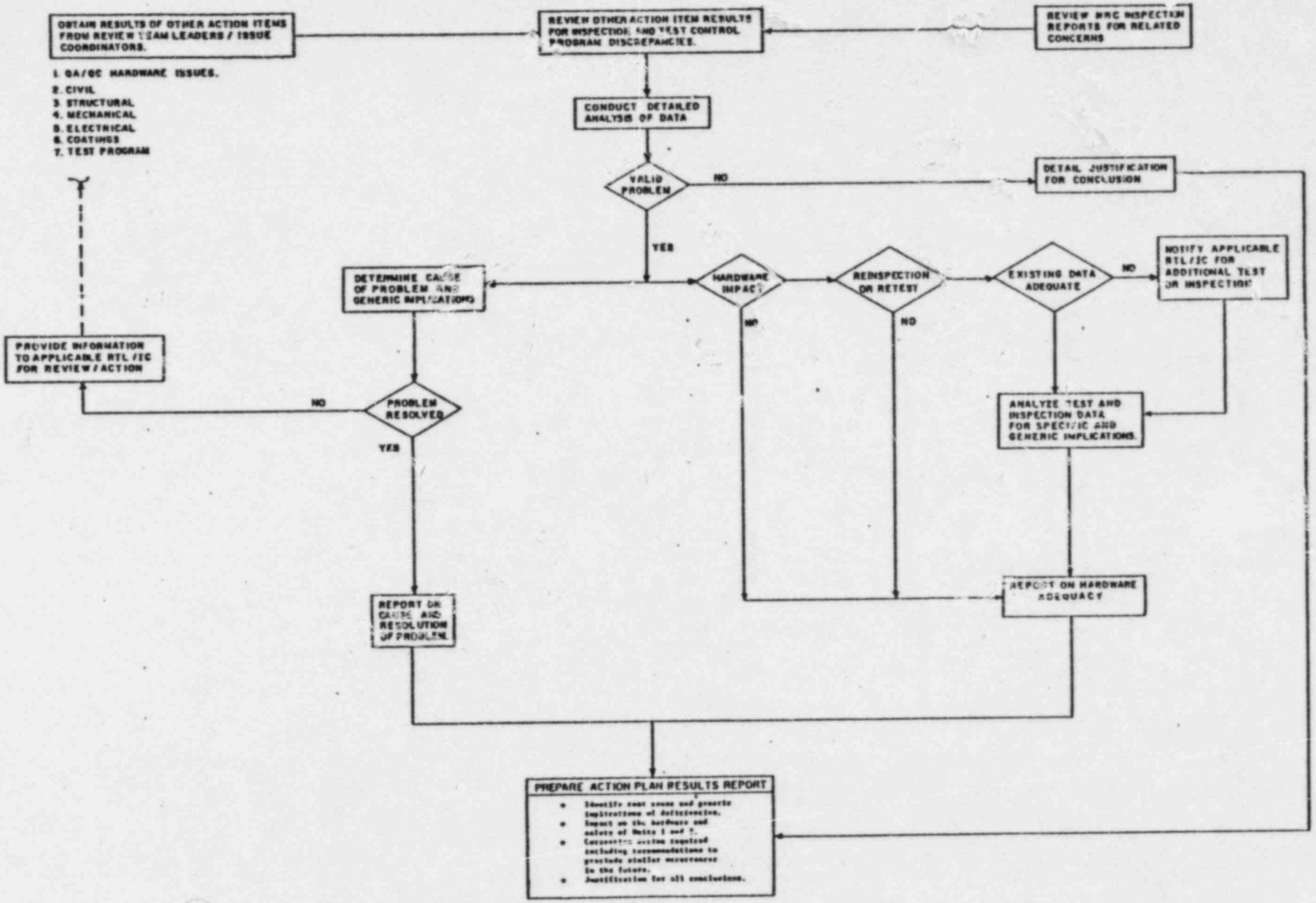
And what's the justification for any conclusions that we reach?

I'm going to show you that chart at the very tail-end as a wrap-up, because that really pulls it all together.

(A copy of Viewgraph No. 18 follows and is made a part of the record.)

MR. HANSEL: As a part of that same

QUALITY CONTROL INSPECTION



question, we are addressing the QC aspect, the quality control inspection.

Here we will be receiving input from the other team leaders on any inspection activities and the results of those inspections and any problems that that might indicate to us.

We also are going to be looking at any past NRC concerns or current NRC concerns, either from the Region, the TRT or from any other activities.

Then we are going to be looking at other action item results for inspection and test control concerns, discrepancies.

Then it leads us to that box we will advance down through and we will be doing a detailed analysis of the data. Is the program valid or not?

If no, we will provide detail justification and close it out. Yes, then we will start to come down through and determine the problem, or the cause of the problem, and what are the generic implications.

We may end up, if we find an issue here, and have to go back to the other review team. It's an ongoing effort. That's a part of that

dialogue that goes on all the time.

If the problem is resolved, we come down and close it up. Then we'll walk across this way in terms of looking for hardware impacts, this two-box thing that I showed you on the very front end. Programmatic issue may lead you to hardware.

Is there a hardware impact? If no, we come on down. If yes, we may indeed end up doing some re-inspection and retest. We've already done that in the case of the electrical butt splices and other areas, and looking at data as well. Then going through analysis of that data and then a final wrap-up on a report.

Out of that will come some indication of the adequacy of the inspection program, Jose, and I think this will get back to your and Herb's and Cliff's concerns.

There may be some messages that come out of there that tell us that certain other types of certification programs, training programs might not have been adequate, or it could tell us that everything is all right, either way. We'll just have to see how it goes.

MR. LIVERMORE: Before you leave those two, I guess I have a couple of basic questions here.

Go back to the previous chart where you on the final over-all evaluation. One of my main concerns, and I think others, was that we presented certain problems here in our reports right across the three top areas of the chart there, presented certain problems.

We wanted to make sure that you didn't just take those problems and run with those only. In other words, all I see here is results from QA/QC, results from hardware, results from the other teams.

But if you take a lot of those results and look at them, they immediately fall out in terms of programmatic or, certainly, questions that you may want to consider.

"We found these problems in this area. How about other areas the same problems?" I don't see any block here that you've taken these particular items and expanded your horizons to look in those other areas.

For instance, like the other groups found problems of the steam generator lateral supports bolting. Basic questions arise out of that. What happened to QC? How did that happen?

My next question is, okay, how

about the pumps? Did the same problem happen on the pumps? Did it happen in any other big mechanical equipment?

I don't see that type of investigation here where you take these and you expand your horizons into other generic areas. You only address exactly what we found or someone else presented to you, that's all, and you run with that.

MR. HANSEL: Except, Herb, where I'm looking for generic implications. Out of the steam generator bolt problem, I may find that I have to go look at some other hardware of similar types.

MR. LIVERMORE: But that's only on the chart as a result of the above three, which the way -- I read the chart, you only address the three blocks at the top, and the bottom addresses those only.

You are saying really that block down there should be up at the top? To me, it looks like the result of the original three; therefore, that wouldn't expand anything.

MR. HANSEL: No. Anything that came out of here -- Okay, let's take the steam generator bolts, anything that might come out of there, or let's take the electrical area.

If I find, as I walk down through

here, I find generic implications that tells me I need to go look at other hardware of different types, then we'll do that.

MR. LIVERMORE: Okay. You a. saying that block down there is really what I've been talking about?

MR. HANSEL: Yes, and the same thing on the programmatic side from a procedural standpoint; but almost everything that ends up in the trunk is going to get down in those boxes.

MR. BECK: Herb, I think it should be understood that each one of these other disciplinary areas, steam generator lateral support bolting, for example, as they look at that independent of QA/QC, they have to answer the question of generic implications; and that will lead them immediately -- In fact, as I recall from discussions within the last couple of weeks in that particular regard, that other areas where bolted attachments are used, and that type, are in fact going to be explored.

So that generic implication box occurs on every single action plan, and I think is responsive completely to your concern.

MR LIVERMORE: All right. Those are the words I was listening for, but I didn't see it

here.

MR. BECK: Yes.

MR. HANSEL: Now, some of the actions may be called out in other Review Team Leaders' action plans. We'll look at it and we'll concur and we'll work them in there.

But nonetheless, I think when we finish, you'll be satisfied that we've looked at a sufficient number of hardware, where in fact hardware problems tell us we ought to be looking for other generic implications.

The root cause, for instance, in the steam generator bolts, could be a problem in one particular craft or it could be a problem in one shop or it could be a problem in inspection, or both.

That may lead us off into other trails.

MR. CALVO: Just right at the beginning you highlighted the key word, that you said you bound and quantified the issues.

MR. HANSEL: Yes.

MR. CALVO: And I guess you are still saying you are going to have that kind of constraints; otherwise, you may be --

MR. HANSEL: Yes. I don't want to go

out and look at all the bolting.

MR. CALVO: That's right.

MR. HANSEL: I want to look for specific problems, issues, what caused it and where else could that happen.

MR. CALVO: That bound and quantify the issues, that kind of criteria or that kind of judgment, some kind of way right there on the front so we know whether you are going to add new issues, hardware issues, to our TRT list or where you stop, because you may end up with about twice as many issues as the TRT because you may look at them different, express it different.

MR. HANSEL: Exactly, and those two blocks that I showed you, they are just starters.

MR. CALVO: But some kind of way, that kind of criteria, that kind of judgment has to be conveyed here, because I can interpret from this that you are going to go all over the place, if you find some weakness in one area that affects everything everybody has done.

MR. HANSEL: Exactly. These flow charts will result in action plans, and those words will be in the detailed action plans.

I have some draft action plans,

for instance, in hardware. I have not developed them yet in these programmatic issues. Those kinds of words are in there.

MR. CALVO: I think what you may want to consider, somewhere in the front end, how far you want to go, how you are going to bound it.

MR. HANSEL: Yes.

MR. CALVO: Otherwise, everybody is going to be of the impression that you are going to go all over the place, and I don't feel --

MR. HANSEL: We don't plan to do that.

MR. CALVO: Okay.

MR. HANSEL: I only plan to go as far as I have to go, and that's going to be based on what I know of the hardware and how closely I've been able to tie it down to the root causes and a time period, craft, process, et cetera, and go from there.

Generic implications may open me up, but that will be very selective also, based on the bounding and the quantification.

MR. CALVO: So you say new action plans may come up in the future, depending on what results you get as the work progresses in different areas?

MR. HANSEL: Yes.

(A copy of Viewgraph No. 19 follows and is made a part of the record.)

MR. HANSEL: Now, in terms of material traceability, I guess the real questions are: Were adequate controls in place to provide for the control of materials, and does documentation exist to provide those records where required?

These programmatic issues are almost tougher to tackle than some of the hardware issues.

(A copy of Viewgraph No. 20 follows and is made a part of the record.)

MR. HANSEL: We've got to go back and look at the background data on the issue, and that would be NRC inspection reports, ASME reports, TUGCO auditors surveys of that area, Brown & Root audits, inspection reports, NCR's, CAR's, anything that we can collect that will help us identify what was going on in terms of material traceability and what past problems have been identified, how were they were fixed and was that corrective action adequate.

We are then going to do an analysis of that data and look for any problems. Was

KEY QUESTIONS ADDRESSED

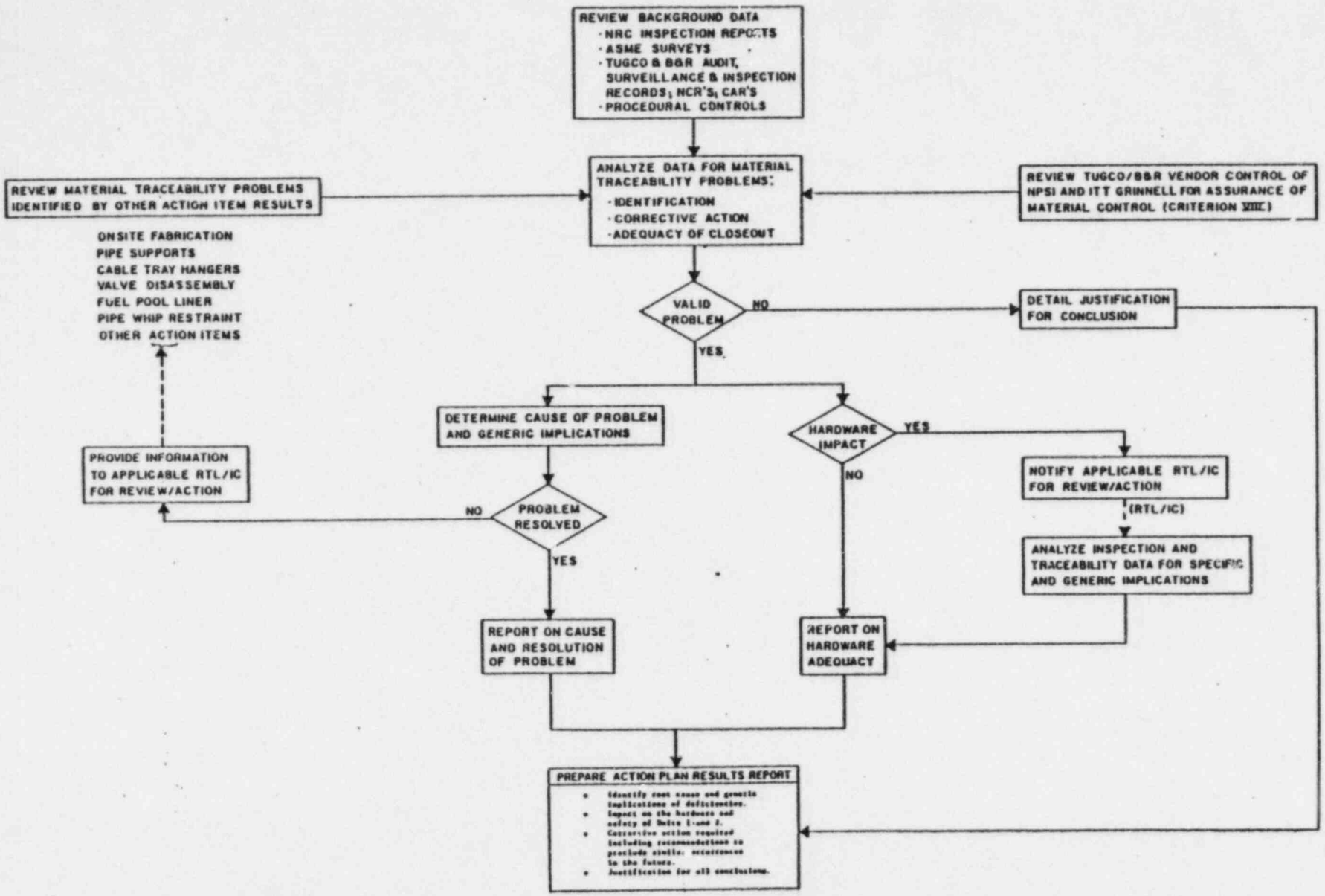
IN ACTION PLANS

MATERIAL TRACEABILITY AND CONTROL

1. WERE ADEQUATE CONTROLS IN PLACE TO PROVIDE FOR THE CONTROL OF MATERIALS?

2. DOES ADEQUATE DOCUMENTATION EXIST TO PROVIDE MATERIAL TRACEABILITY WHERE REQUIRED?

MATERIAL TRACEABILTY



it material identification? Was there a problem in corrective action, and how well the thing was closed out.

We'll also, and this is a key point, as the other Review Team Leaders are putting together their action plans, if we can capture data from their efforts -- we are building in the attributes into their inspection checklists to collect that data.

So if they are going to be out inspecting whatever it might be and there's an inkling that there's a material traceability requirement, we'll put an attribute in there to verify that data as well, both documents and hardware.

So we'll also be receiving input from the other Review Team Leaders in this area.

There was, Herb, in the January letter one or two -- I think it's one paragraph, where it talks a bit about -- it didn't say there was a problem, but it inferred that there could maybe have been a problem on material traceability at the suppliers.

So we would be looking at the control of NPSI and ITT Grinnell for assurance of what they had in terms of procedure and control of material traceability.

Once we get through that, we'll try to make a determination do we think that there was a problem, yes or no.

If not, then we come on down and close that one out through the right-hand loop.

If yes, basically then we follow about the same logic that we followed before. What was the cause of the problem, the generic implications, is it resolved?

We may have to go back up here again. If it was, what was the cause and how was it resolved, and close it out.

Look at hardware. Did it impact the hardware? If yes, we get back with our other Review Team Leaders and Issue Coordinators and develop a plan of action on how to go assess that.

It may be analyzing inspection records and traceability data. It could even be going back to the hardware.

One of the generic implications, if you did not have that traceability, what does does that do to you? We'd have to go trace that down.

If there was no hardware impact, then we would advance on down and close it out.

MR. LIVERMORE: Do you have details in

your action plans on this chart? In other words, like "Hardware Impact, Yes or No," what do you really mean by that? Is this written down anywhere?

MR. HANSEL: On the programmatic, Herb, this is all I have prepared, these flow charts. We are in the process of writing those. I anticipate them starting to come out this week, some of them.

On the hardware issues, which I'm going to cover later, I do have action plans, first rough draft plans, written.

Yes, we will be talking about that, what does that really mean, and in the action plans we'll talk about it.

MR. LIVERMORE: Because there's a lot of things here that are certainly open to be very interpretive. "Valid Problem, Yes and No," what do you mean by that? What's your definition of that.

Okay, you say that's to come.

MR. HANSEL: It will be in there. It will be in words. This is merely the logic and how we plan to approach it.

MR. LIVERMORE: Again, as I mentioned once before, too, I don't see it here. If there was any smell of a traceability problem or even related to, normally you would consider going out and doing

a little separate material traceability inspection yourself, say other than pipe supports, some other area, just to put it to bed.

I don't see that type of thing here unless it's -- To me, that should happen right off the top and not way down after all the yes's and no's.

Is that inherent in the word "analyze"?

MR. HANSEL: Well, I can't advance to that point until I determine if there is a problem.

Once I have satisfied myself that I think there's a problem there, then yes, I would probably go do that.

If I find everything clean there, and I find records and documentation that back it up, I may not want to go a whole lot further. But if I find any inkling that there may be a problem, we'll have to advance beyond that.

MR. HALE: John, do you think we ought to give the reporter a break?

THE COURT REPORTER: Yes.

MR. HANSEL: Okay.

(Brief recess taken.)

MR. HANSEL: Vince, do you want to go

ahead and get started. I guess we are ready to get started.

I had folks gather some data for me this morning that I did not have early on, and I think, Herb, it was you that asked the question about how many people. I think it's very pertinent that we add some data to that.

We have people on board with a total of 422 years of QA experience, with an average of 14 years per person. We've got 197 years of engineering experience with the Stone & Webster people, for twenty-four-and-a-half years average per person.

In terms of nuclear experience, we have 402 years total, with ten-and-a-half years average person. In terms of assessment or reinspection programs, we have 38 years with about 1.3 average per person. Of course, those have just been going on in recent years.

I think those are rather impressive numbers.

(A copy of Viewgraph No. 21 follows and is made a part of the record.

MR. HANSEL: Moving right along, I think

KEY QUESTIONS ADDRESSED

IN ACTION PLANS

DEFICIENCY REPORTING SYSTEM:

1. WERE THE PROCEDURES, AS IMPLEMENTED, ADEQUATE TO IDENTIFY, DOCUMENT AND DISPOSTION HARDWARE DEFICIENCIES?

2. WERE DEFICIENCIES PROPERLY TRENDED, ANALYZED FOR DETERMINATION OF CORRECTIVE OR PREVENTIVE ACTION AND ANALYZED FOR REPORTABILITY?

it's pertinent you understand this. I've taken the total flow of writing a discrepancy to correct it and get in a disposition to corrective action and reportability.

If you take that in its totality, you could have one large action plan that might stay open for a long period of time.

We have chosen to take that in incremental pieces, and the results from each will feed into the next.

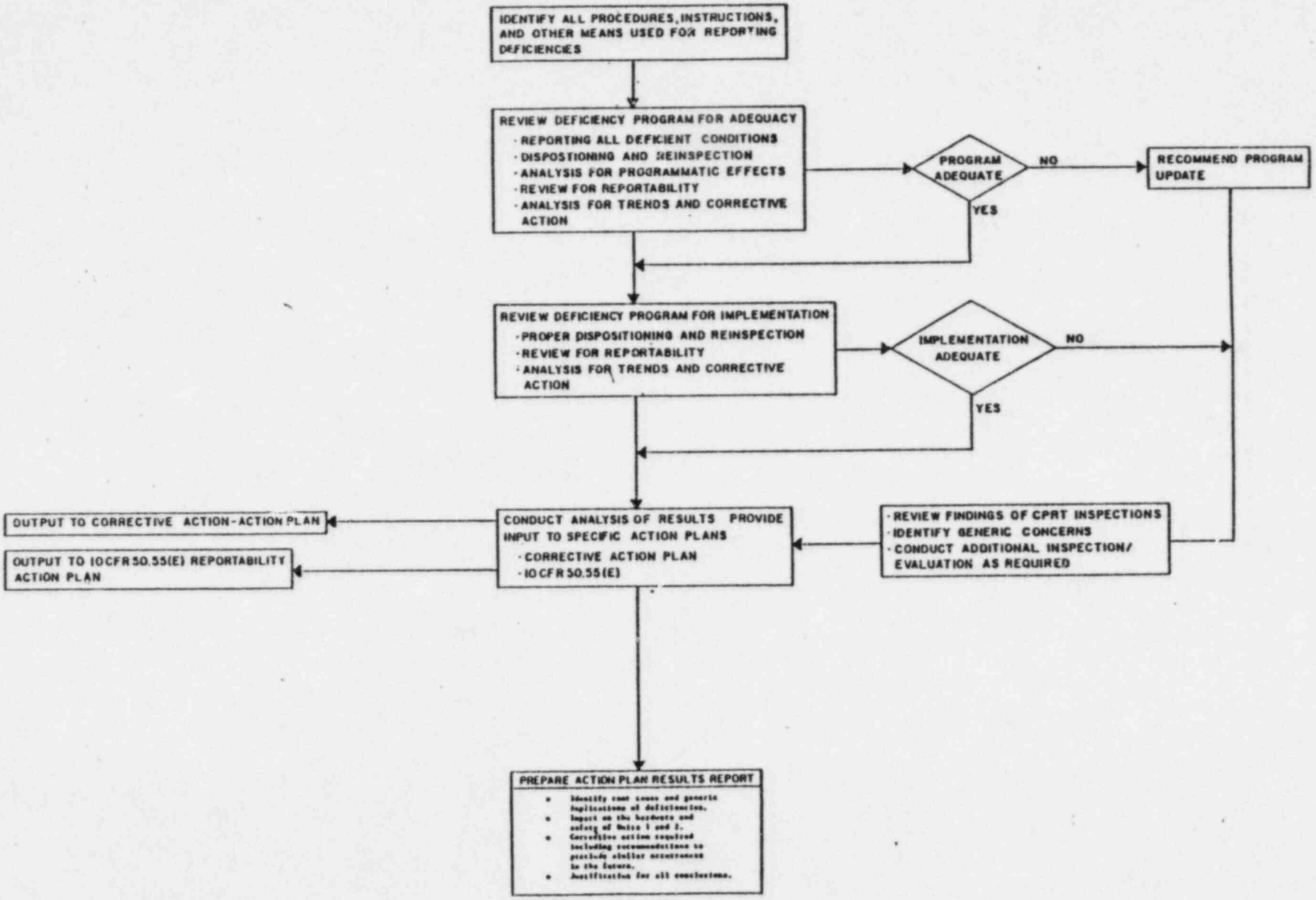
So I'm going to talk about those three elements of the program in three discrete pieces.

(A copy of Viewgraph No. 22 follows and is made a part of the record.)

MR. HANSEL: The first one I'll talk about will be deficiency reporting systems, NCR's, IR's. You talk about 40 methods of identifying discrepancies. What does engineering have in place, and we are going to talk about that first.

The real questions here to be answered: Were the procedures as implemented adequate to identify, document and disposition hardware deficiencies? Secondly, were those deficiencies trended and analyzed for determination of corrective

DEFICIENCY REPORTING



or preventive action and analyzed for reportability? So this will lead into those two issue plans.

The first piece of this, the January 8th letter addresses that in somewhat of a global fashion, and I'm not sure that you looked at all areas.

That's not meant in the form of criticism, but I don't know that you got into looking at what engineering does in the event that they find a problem and what each of the various shops might do if they find a problem.

So we plan to identify all procedures, instructions and any other means that they might have had for procedures governing how do you report nonconformances or deficiencies in the hardware.

We are going to review those for adequacy, and there we are going to be looking at were they designed -- I'm in the design phase now. We'll attack implementation in a minute.

Were they designed to report all deficient conditions? Did they, the forms and methodology used, were they adequate to allow for the analysis of that defect or those family of defects for programmatic issues?

Was there enough data given

to allow for a review of the reportability in accordance with 10 CFR 50.55(E)? And was the data adequate and timely enough to allow for trending?

We are going to be looking at those procedures in that particular case.

We'll branch off to the right. In our review of that material, did we find the program to be adequate? If yes, we will advance on down and look at the implementation phase through the center of the tree.

If no, then we are going to recommend that those procedures be improved for the future.

Coming down then to this block, we are going to be looking at the implementation and we will be looking at some sample of records, the size we do not know yet; but we are going to be looking at those for adequate and proper dispositions given. Was the hardware reinspected after the fix, if the hardware in fact was repaired or reworked.

And we'll be looking at, again, as you advance through this, because there may be some data in the analysis by engineering and in the corrective action that told you that you may have a reportable item. So we'll be looking in that area.

And were discrepancies included into a trending program, as required by Appendix B, and I'll talk about the trending later, but we will be looking in that particular area.

Then we will be making a judgment, was the implementation of that system okay. If not, then we will advance from there.

MR. LIVERMORE: Let me ask a question about when you talk about implementation. Now, are you talking implementation of only those procedures you have above this?

In other words, you start out with a certain group of procedures that talk about deficiency reporting, and then you talk about implementation thereof.

Now, what about misuse of the system of repo.ting?

MR. HANSEL: That would be in the implementation.

MR. LIVERMORE: In other words, I don't see anything. For example, you know that Request for Information Form, they misused that quite a few times.

Would that fall under here?

MR. HANDSEL: If that form were used in any way to fix discrepancies, deficiencies, we've

included it. It would fall in this realm.

MR. LIVERMORE: Okay. Normally, if you look at procedures for this deficiency reporting, you wouldn't -- that form wouldn't fall under that title. It's a form used for something other, but it's a misuse of that.

MR. HANSEL: Okay. You'll notice "all." We know already, or we think we do, of one problem area, and I know you are concerned in that particular area. So we are going to be looking for any and all systems that could have been used to correct hardware discrepancies.

MR. LIERMORE: All right. You are expanding your horizons.

MR. HANSEL: We will expand beyond the NCR's and the IR's. We are going to go look at everything we can find that might have been used to document discrepant hardware and to fix it.

So this is not just restricted to NCR's and IR's, Herb. This is global, anything at all. Engineering may have had a different piece of paper. The fab shop may have had a different piece of paper.

We are going to go find what those were and that will be included in this. Then hen we

get to the implementation, we look at that as well.

MR. LIVERMORE: How about the translation of requirements from, say, the design specifications on down to procedures? I don't see that addressed anywhere. Is that all-inclusive in this, too, or are you just starting with the procedures.

MR. HANSEL: I'm talking here now reporting of hardware discrepancies. I'm not sure I'm reading you.

If you are talking about I have a design drawing and a spec and I am now going to translate that and convert it to an inspection report or record, is that the area?

MR. LIVERMORE: Yes. Maybe it's a little off the subject here, but let me ask it now.

MR. HANSEL: I'll get to that when I get into the hardware flows.

MR. LIVERMORE: All right.

MR. HANSEL: I'll be looking for that aspect there. Okay?

MR. LIVERMORE: Okay.

MR. HANSEL: So then, after we have gone through the implementation phase, we are then going to see if enough data is sufficiently fed then for corrective action in the 50.55(E) report. Off to

the left you will see that we will be feeding those two action plans. Those two action plans are the next two I'm going to talk about.

If the implementation was not adequate, then we would have to go possibly -- we would look at other inspection activities and collect the data from those, that are being conducted by the CPRT.

We would look for the root cause and generic implications, and we may well get up into -- or back into looking at some inspections, if in fact we found a problem in the disposition of nonconformance reports. We may actually go back and do some inspections, but we'll make that decision after we have done a lot of detailed analysis.

Now, again, these are written in three pieces, hopefully that I can close them out incrementally.

So when we finish that, we should be working the Corrective Action Program in parallel and the 50.55(E), but those would feed into it.

(A copy of Viewgraph No. 23 follows and is made a part of the record.)

MR. HANSEL: In terms of the corrective

KEY QUESTIONS ADDRESSED

IN ACTION PLANS

CORRECTIVE ACTION

1. HAS THE CORRECTIVE ACTION PROCESS BROUGHT SIGNIFICANT PROBLEMS TO THE ATTENTION OF APPROPRIATE MANAGEMENT?

2. HAVE EFFECTIVE CORRECTIVE ACTIONS BEEN IMPLEMENTED?

action area: Has the corrective action process brought significant problems to the attention of appropriate management, and have corrective actions been implemented as a result of NCR's and trending data?

(A copy of Viewgraph No. 24 follows and is made a part of the record.)

MR. HANSEL: Here we would take and determine what commitments TUGCO had made in terms of the FSAR, the SER, any plans and procedures and maybe in response to past audits or NRC inspections.

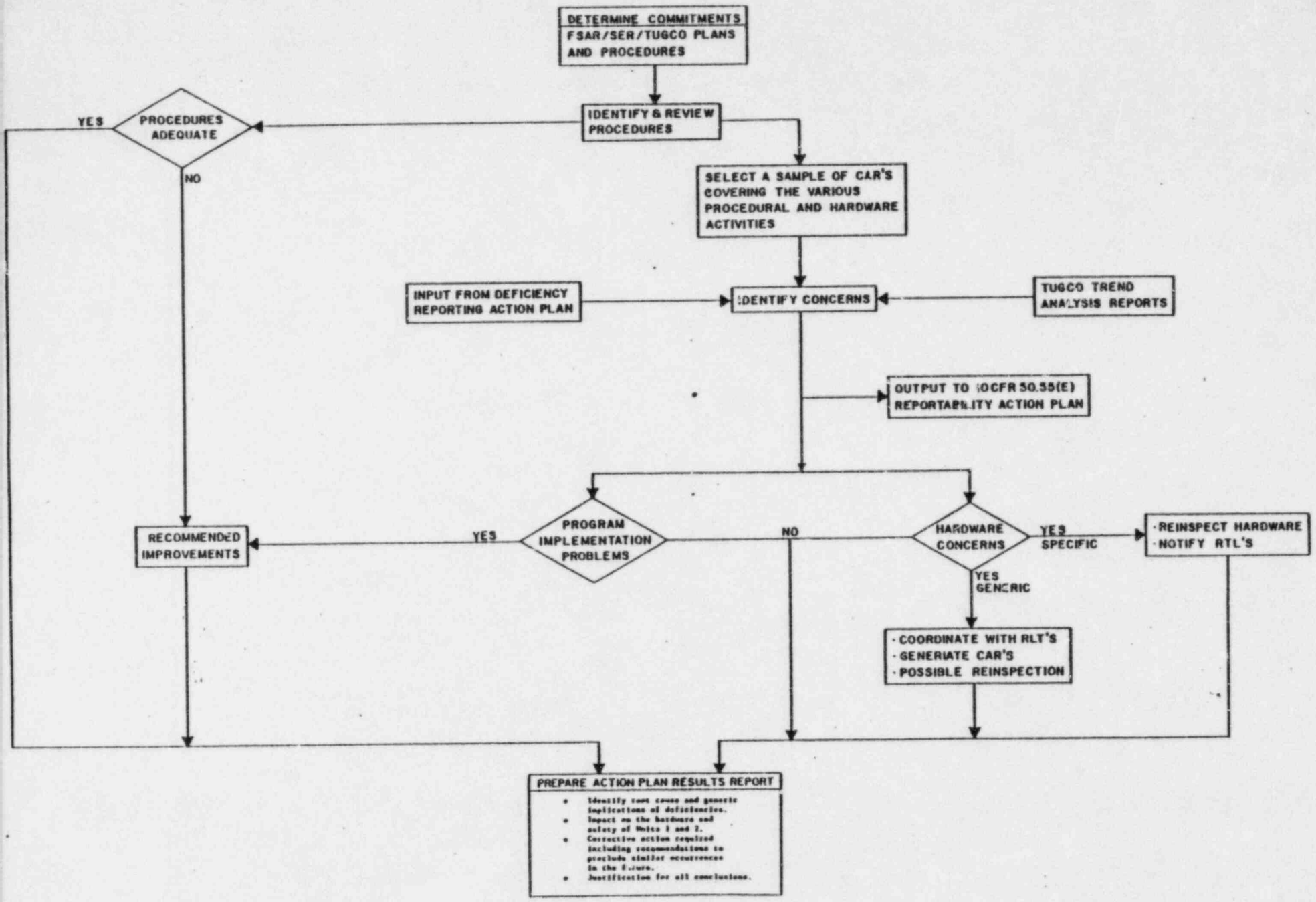
What are the commitments that they have made, and we would identify them and all procedures. Through analysis, do we find those procedures to be adequate and do they in fact satisfy their commitments? If it's yes, we would proceed to close out that through that link.

If not, then we would be making recommendations from this point forward.

Coming down through the other side, we would plan to take a sample of corrective action reports and there we would bias that sample. I think rather than going to just a statistical sample, we would bias that in terms of various procedures, processes, hardware, craft, inspection. Again, I

(24)

CORRECTIVE ACTION



think this would help us to bound it, if we took a biased sample there.

We would review those for the implementation and for the effectiveness. Out of there we would have any concerns that might come.

At that same time now, we have received input from the previous chart on deficiency reporting.

Also, we will be taking into consideration what trend reports were developed. How was that done? What was the methodology? What was the output from those trend reports and how was that data used, because you can generate a corrective action request from two sources. One is a single isolated instance or two that may come out as a result of trending.

So we would be looking at the input from trend reports to see if that did in fact get considered adequately for corrective action.

Coming out of that loop, then you also have a link that feeds into the 50.55(E) reportability area, and then we would branch down two ways.

We would identify if there were any program implementation problems, and as a result of

this review of corrective action, do we have any open concerns on the hardware.

If there were program implementation problems, we would make recommendations and fix it through TUGCO.

If we found none there, we would proceed to close out.

In terms of hardware, if we have specific concerns, we may want to go back and reinspect the hardware, and we would be talking to the other Review Team Leaders in the areas of concern.

We may find that certain corrective action requests involving electrical may not have been totally effective. We may find it in equipment setting, or whatever, but that would get us down to some specifics.

We may also have coming out of there some generic concerns in terms of hardware. We must get with the other Review Team Leaders --and I apologize for the reversal of the "L" and the "T" there, but we may generate some new CAR's and possibly do some reinspection as a result of that, and then advance to the closeout at the bottom.

If we look at --

MR. LIVERMORE: Before you leave that,

one question, and I notice you talk about TUGCO trend analysis reports. I don't see anything about Brown & Root. Are you addressing --

MR. HANSEL: I'm sorry. It should be Brown & Root as well.

MR. LIVERMORE: All right.

MR. HANSEL: Yes, Brown & Root as well.

(A copy of Viewgraph No. 25 follows and is made a part of the record.

MR. HANSEL: Looking at reportability, were the procedures, as implemented, adequate to ensure that deficiencies having a potential for reportability were properly analyzed? Did they have procedures that told them what to review various documents for, and what the threshold to reporting was?

Then we would look to determine were deficiencies classified as not reportable analyzed and appropriate corrective action measures taken.

The real proof of what we are after here is did the hardware end up okay. Yes, we would like to be sure that the Applicant met all the requirements of 10 CFR 50.55(E), but my main concern, and I'm sure yours as well, is the fact that did the hardware get fixed.

KEY QUESTIONS ADDRESSED

IN ACTION PLANS

REPORTABILITY

1. WERE THE PROCEDURES, AS IMPLEMENTED, ADEQUATE TO ENSURE THAT DEFICIENCIES HAVING A POTENTIAL FOR REPORTABILITY WERE PROPERLY ANALYZED?

2. WERE DEFICIENCIES CLASSIFIED AS NOT REPORTABLE, ANALYZED AND APPROPRIATE CORRECTIVE AND PREVENTIVE MEASURES TAKEN?

So you may have something that maybe did not get reported, but did it get fixed, which is our first concern, and we will be looking at that specifically.

(A copy of Viewgraph No. 26 follows and is made a part of the record.)

MR. HANSEL: Now, in your book there is a mistake. This line right here was omitted. You may want to pencil that line in.

Is that the one that was missing?

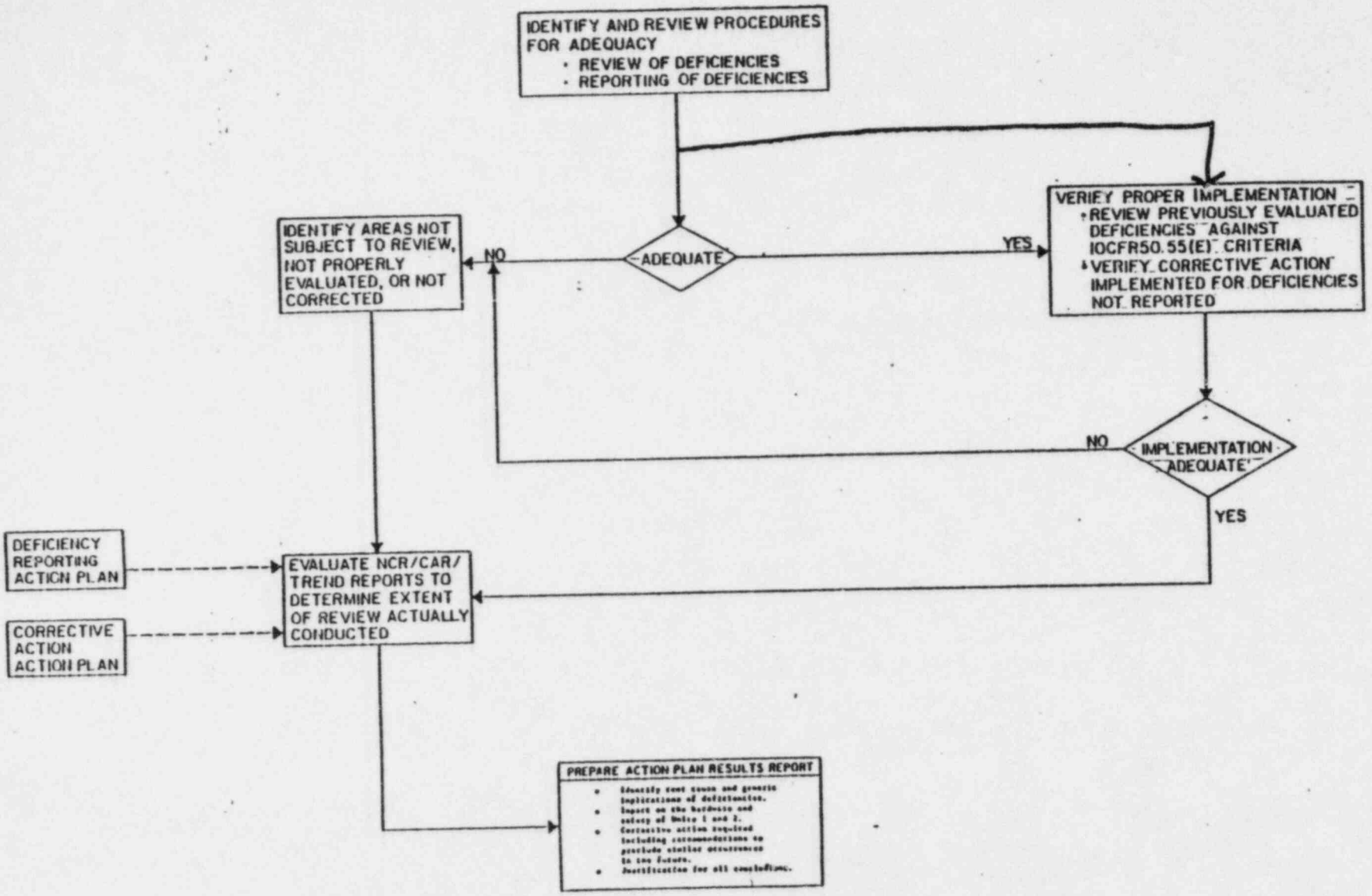
MR. CHRISTENSEN: Yes.

MR. HANSEL: Here we are going to look at the procedures and apply our best judgment and knowledge to 50.55(E) and make a determination if they were adequate.

If they were not, then we are going to have to look at areas that we may want to review. There may have been some categories or families of types of discrepancies that we did not find proper reviews for reportability, and we would have to advance down to evaluating the NCR's, the CAR's, the trend reports and everything that went into what could have been reportable.

Here is where we get the input

REPORTABILITY
(10CFR50.55(E))



from the previous two action plans.

If we found them to be adequate, then we're going to look at the implementation. It's my understanding and don't hold me to this, but we are researching it right now, that there is a first screening that identifies candidates for reportability concerns, and we would be looking at what was not reported out of that population, that smaller population, and [redacted]e if we found any problem.

So we would look at what was previously reported, what was not reported in that sample, and at criteria, and we'd be looking very hard at the corrective action and implementation.

As I indicated earlier, I think our very first concern is that the hardware gets corrected. So either through the corrective action process or some other means, was the situation corrected to prevent recurrence. We would be looking at that hard.

We will also be looking for reportability.

That's basically it on reportability. So through those three, we will be looking at that total flow.

All right.

(A copy of Viewgraph No. 27 follows and is made a part of the record.)

MR. HANSEL: In terms of document control -- I think that was Section 10 of your January letter. There are a lot of inferences that one can draw from that, and until we get the SSER I don't know that I can totally put my arms around it.

But primarily, at least in my opinion, what needs to be satisfied is does the documentation that's in the vault match the hardware. That's the real proof of the pudding, and so that's the question we'll be trying to answer.

There was a program conducted by TUGCO in '83, quite an extensive program, to do a design change verification where they took, I think -- we are going to go verify it first before we are totally satisfied, but it's my understanding that that program considered all types of hardware and involved a very, very large sample, close to a hundred percent, if not a hundred percent, of verification between the bought-off verified inspection record as to drawing number revision, DCA and CNC, back against what was released from engineering; and that they baselined and corrected any problems that they found at that point in time.

KEY QUESTIONS ADDRESSED

IN ACTION PLANS

DOCUMENT CONTROL

1. DOES THE INSTALLED HARDWARE MEET THE LATEST DESIGN REQUIREMENTS?

That effort was completed on December the 9th.

(A copy of Viewgraph No. 28 follows and is made a part of the record.)

MR. HANSEL: So we are going to go, the first step in our action plan, we'll be looking at that and verifying a sample of that plan, if in fact we are satisfied with the way it was implemented. So far, I am. I'm not finished yet, but so far it looks good.

So we would then take a sample of their effort, and based upon that, we would then -- and here's that sample. We would then over on the left-hand side -- I'm sorry. Here is the sample of their effort over here on the left-hand side.

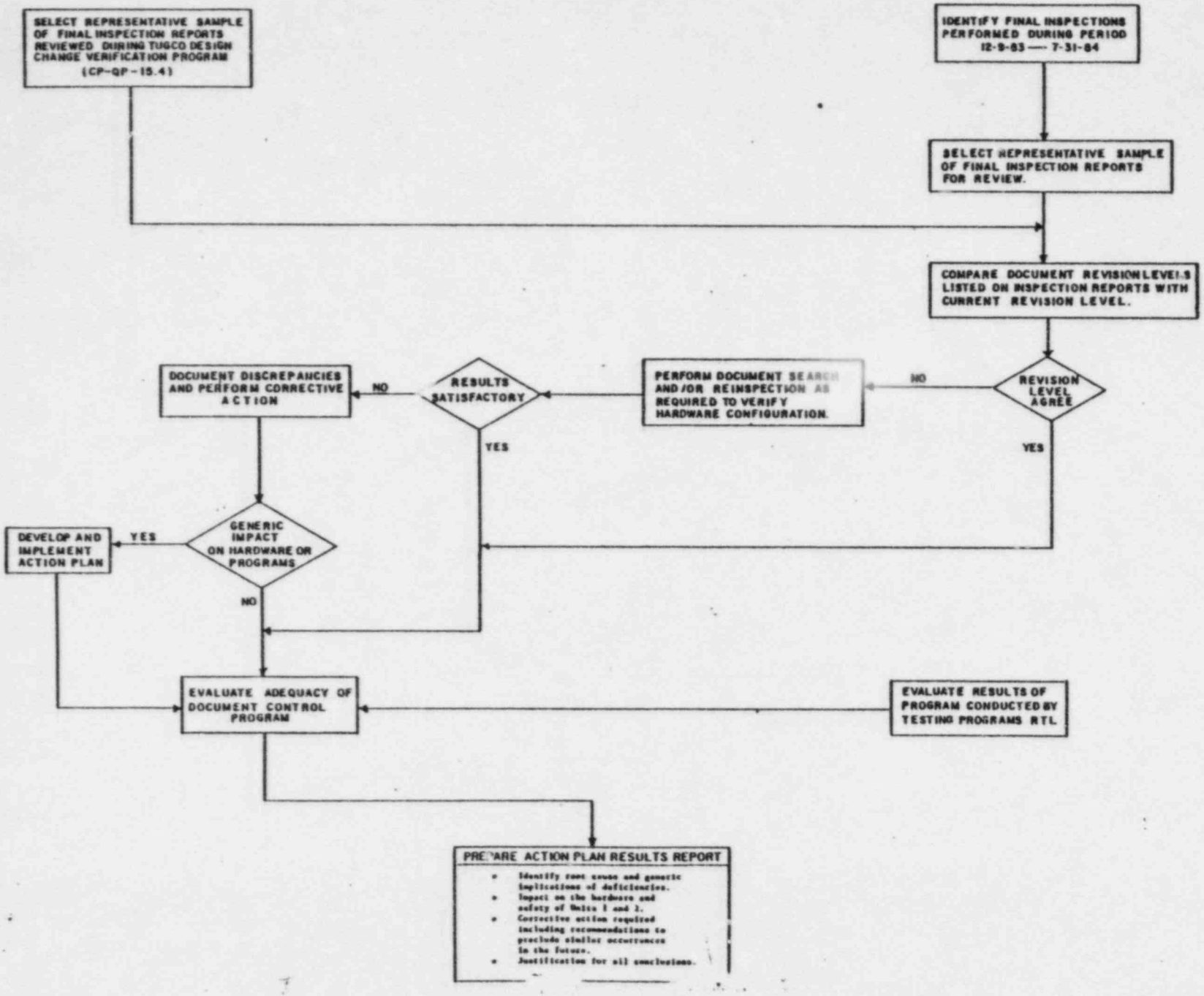
We would then take a sample from that point until now and go through a review on a one for one check on that sample. If we see the need to expand, we would expand.

Coming on down --

MR. LIVERMORE: What do you mean by one-for-one sample?

MR. HANSEL: We would take a sample and we would do a one-to-one verification of each item in

DOCUMENT CONTRO



the sample.

MR. LIVERMORE: You are going to take TUGCO's inspection at that time, and you are going out to look at the hardware to verify it?

MR. HANSEL: No, n.. This is a paper review.

MR. LIVERMORE: Only of paper.

MR. HANSEL: I'm going to the vault and I'm going to take samples of records that show the as-built condition of that hardware, including DCA's and CMC's against the hardware, against the drawings and specs.

Then we'll compare that to what's released by engineering as reflected at that date and time. So it's a paper review.

We'll be looking, Herb, when we do any other inspections, we'll be doing some hardware reviews as well, inspecting back against that particular revision.

This particular one, looking at document control, is purely, to start out with, a paper chase. If I find problems, where they disagree, I'm going to to the hardware. Okay.

MR. LIVERMORE: You started out saying the proof of the pudding is the hardware versus

documentation, but now you are only relying that on the documentation.

MR. HANSEL: I'm chasing the adequacy of the documentation. Now, in every other inspection that we do, one of the final attributes there will be to look at the documentation in the vault. So I'll have a fair-sized sample coming from the hardware back.

But on this action plan, I'm just attacking the documentation aspect. Does that verify, the final record by QC match up with engineering?

MR. LIVERMORE: I'll hold off for a while. Go ahead.

MR. HANSEL: Okay. We will have, I think, when we are finished, a fair-sized sample coming the other way from the hardware end.

If we find a disagreement between the revision levels, then we are going to have to go prepare a document search and maybe a reinspection to verify the hardware configuration. If that identifies problems, then we'll end up going to the hardware in many cases.

If I find a high level of agreement here, then that tells me that at least that piece of the system is working. It doesn't tell me the

adequacy of the inspection process on hardware. It tells me the adequacy of the records.

If the results of that are satisfactory, we come on down and look for any improvements we want to make for the -- We would look at the adequacy of that program.

Any discrepancies, we are going to go look at the generic implications on the hardware, and that could bounce back into other Review Team Leaders who may have to have a specific action plan to go after that.

But I don't know how big that is. The kind of problems you found, I don't really have a whole lot of ways of verifying; changes of dates, what might have looked like signature changes, I don't have any way to verify it.

Maybe the proof of the pudding, again, is in the hardware and agreement with the latest change, revision.

All right. So we are looking now at the adequacy of the document control program. If it's okay, we'll come on down and write this off.

We will also be receiving input from the other Review Team Leaders, as well as our own inspections, this block right here, which would

give us some input back from the hardware.

(A copy of Viewgraph No. 29 follows and is made a part of the record.)

MR. HANSEL: The audit program. Is the current audit program adequate to identify quality programs in a timely manner?

I saw no need to go back in history. To me, again, the proof of the pudding is in the hardware.

Yes, we would have liked to have seen things maybe better, but let's make certain that we are in good shape for Unit 2 and Unit 1 operations.

No flow plan on this one.

(A copy of Viewgraph No. 30 follows and is made a part of the record.)

MR. HANSEL: The initiatives that we plan to take, in your letter you aimed at a certain time frame in '81 and '82.

We want to look at the total programs that were in place at that time; not only audits, but any surveillance activities, management overviews, outside inspections, whatever might have given management some insight as to the adequacy of

KEY QUESTIONS ADDRESSED

IN ACTION PLANS

AUDIT PROGRAM

1. IS THE CURRENT AUDIT PROGRAM ADEQUATE TO IDENTIFY QUALITY PROGRAMS IN A TIMELY MANNER?

(38)

ACTION PLAN OUTLINE

ADEQUACY OF THE QA AUDIT PROGRAM

ISSUE:

DURING THE PEAK SITE CONSTRUCTION PERIOD OF 1981-82, TUEC EMPLOYED ONLY FOUR AUDITORS, ALL OF WHOM HAD QUESTIONABLE QUALIFICATIONS IN TECHNICAL DISCIPLINES. ALTHOUGH CHARGED WITH OVERVIEW OF ALL SITE CONSTRUCTION AND ASSOCIATED VENDORS, THESE DALLAS BASED AUDITORS PROVIDED ONLY LIMITED QA SURVEILLANCE OF CONSTRUCTION ACTIVITIES.

INITIATIVES:

ESTABLISH DATA ON THE OVERALL VERIFICATION PROGRAM, e.g., AUDIT, SURVEILLANCE, ETC., IN EFFECT DURING 1981 AND 1982.

REVIEW THIS DATA FOR COMPLIANCE TO COMMITMENTS.

ANALYZE IDENTIFIED DISCREPANCIES FOR SIGNIFICANCE, WITH CONSIDERATION FOR OTHER OVERVIEW PROGRAMS IN EFFECT.

REVIEW CURRENT VERIFICATION PROGRAM FOR COMPLIANCE TO COMMITMENTS AND FOR ADEQUACY.

REVIEW SAMPLE OF QUALIFICATION RECORDS FOR CURRENT AUDIT STAFF.

PROPOSE CORRECTIVE ACTION AND/OR IMPROVEMENTS TO CURRENT PROGRAM.

the QA/QC program.

We would see and formulate an opinion as to whether or not that met their commitments in the FSAR.

Any discrepancies that we picked up in that early review we would try to determine the significance, and we may have to look at other overview programs that might have been in effect, outside programs.

We then want to -- That's just a database. That tells us that we either were okay or we were not okay. If there's something to attack out of there, we'll go after it, but just to go back and worry about past history in that case doesn't do a whole lot.

We would rather concentrate more on getting the program in good shape for the future, which gets to the next initiative.

We'd look at the current program for compliance with commitments and also make a judgment as to adequacy.

We'll review a sample of records of the current staff and make any recommendations for improvement.

(A copy of Viewgraph No. 31 follows and is made a part of the record.)

KEY QUESTIONS ADDRESSED

IN ACTION PLANS

MANAGEMENT ASSESSMENT

1. ARE CURRENT ASSESSMENT PROGRAMS PROVIDING SENIOR MANAGEMENT WITH APPROPRIATE DATA FOR THE ASSESSMENT AND MONITORING OF THE IMPLEMENTATION OF THE QA PROGRAM?

MR. HANSEL: Management assessment. Much the same line of thinking. I see no need to go back and do a whole lot of review of the past. I mainly want to look and see if current assessment programs are giving senior management the visibility that they need and the data that they need to assess and monitor the program.

(A copy of Viewgraph No. 32 follows and is made a part of the record.)

MR. HANSEL: And what we will do there is -- we have a lot of this data already, but what's the accepted norm? I'm sure that everybody has their own criteria for what's acceptable or not acceptable in this area.

One utility management may look at it differently than another. So we want to get the best data that we can in terms of what's been accepted in the industry, what seems to be adequate.

We'll go to places like INPO. We'll go to owners' groups. We'll talk to other utilities. Then we'll look at the current TUGCO program and practices concerning management reviews and assessments. We'll compare the two and then make recommendations on how they might improve that program,

32

ACTION PLAN OUTLINE

MANAGEMENT ASSESSMENT OF QA/QC PROGRAMS

ISSUE:

TUEC FAILED TO PERIODICALLY ASSESS THE OVERALL EFFECTIVENESS OF THE SITE QA PROGRAM IN THAT THERE HAVE BEEN NO REGULAR REVIEWS OF PROGRAM ADEQUACY BY SENIOR MANAGEMENT. FURTHER, TUEC DID NOT ASSESS THE EFFECTIVENESS OF ITS QC PROGRAM.

INITIATIVES:

- DETERMINE THE ACCEPTED INDUSTRY PRACTICE FOR AN EFFECTIVE MANAGEMENT REVIEW PROGRAM, UTILIZING RECOGNIZED AUTHORITIES SUCH AS INPO.

- REVIEW CURRENT TUGCO PROGRAM AND PRACTICES CONCERNING MANAGEMENT REVIEWS AND ASSESSMENTS.

- PROPOSE CORRECTIVE ACTION AND/OR IMPROVEMENTS TO THE CURRENT PROGRAM.

if it's required.

(A copy of Viewgraph No. 33 follows and is made a part of the record.)

MR. HANSEL: Exit interviews. The Safe Team is in place. That program has been developed and was started in late '84, early '85.

We want to look at their program. I have copies of the procedures. We want to look at that program and see if we feel that that program is really designed to identify employee perceptions regarding project strengths and weaknesses, and will it achieve the appropriate corrective actions where necessary.

(A copy of Viewgraph No. 34 follows and is made a part of the record.)

MR. HANSEL: So we are going to go review and talk to the current -- I'm sorry about this on this chart.

They currently have an ombudsman on site. We want to go talk to him and see how he's doing and see how that system is working. He's been on board for some time prior to the Safe Team.

Again, review the procedures and

KEY QUESTIONS ADDRESSED

IN ACTION PLANS

EXIT INTERVIEWS

1. IS THE SAFE TEAM PROGRAM DESIGNED TO IDENTIFY EMPLOYEE PERCEPTIONS REGARDING PROJECT STRENGTHS AND WEAKNESSES, AND ACHIEVE APPROPRIATE CORRECTIVE ACTIONS WHERE NECESSARY?

ACTION PLAN OUTLINE

EXIT INTERVIEWS

ISSUE:

THE TUEC EXIT INTERVIEW SYSTEM FOR DEPARTING EMPLOYEES APPEARED TO BE INEFFECTIVE.

INITIATIVES:

1. REVIEW THE CURRENT ACTIVITIES OF THE CPSES SITE OMBUDSMAN.

2. REVIEW THE POLICIES AND PROCEDURES CURRENTLY IN DEVELOPMENT BY SAFE TEAM.

3. DETERMINE THE EFFECTIVENESS OF THE ABOVE PROCEDURES TO:

   (a) DOCUMENT EMPLOYEE STATEMENTS ON PROJECT STRENGTHS AND WEAKNESSES.

   (b) RESOLVE IDENTIFIED EMPLOYEE CONCERNS WITH TUGCO MANAGEMENT AND INTERVIEWEE.

   (c) ALERT TUGCO MANAGEMENT TO POSSIBLE ROOT CAUSES AND GENERIC IMPLICATIONS OF IDENTIFIED CONCERNS.

   (d) PROTECT THE ANONYMITY OF THE INTERVIEWEES.

4. FOLLOW UP WITHIN TUGCO ON ACTIONS TAKEN TO PREVENT REOCCURRENCE OF A SAMPLE OF PROBLEMS IDENTIFIED BY OMBUDSMAN AND SAFE TEAM.

5. EVALUATE EFFECTIVENESS OF THE PROGRAM AND MAKE RECOMMENDATIONS, IF APPLICABLE.

policies developed by the Safe Team and see how that has been implemented; look at those procedures and then make recommendations.

(A copy of Viewgraph No. 35 follows and is made a part of the record.)

MR. HANSEL: We have one final point on the programmatic stuff, programmatic issues, housekeeping.

I can't do a whole lot unless I find major holes employes in past practices that might cause we to be suspicious of the hardware, but we are going to be looking at current housekeeping and system cleanliness practices, are they adequate.

(A copy of Viewgraph No. 36 follows and is made a part of the record.)

MR. HANSEL: There was a flushing procedure referenced in your letter, and I think also brought out in the SSER concerning pre-op testing.

We are going to be looking at and conducting a survey of plant areas for evidence for any housekeeping or cleanliness problems and how could that have an impact on hardware.

We will look at any past reports

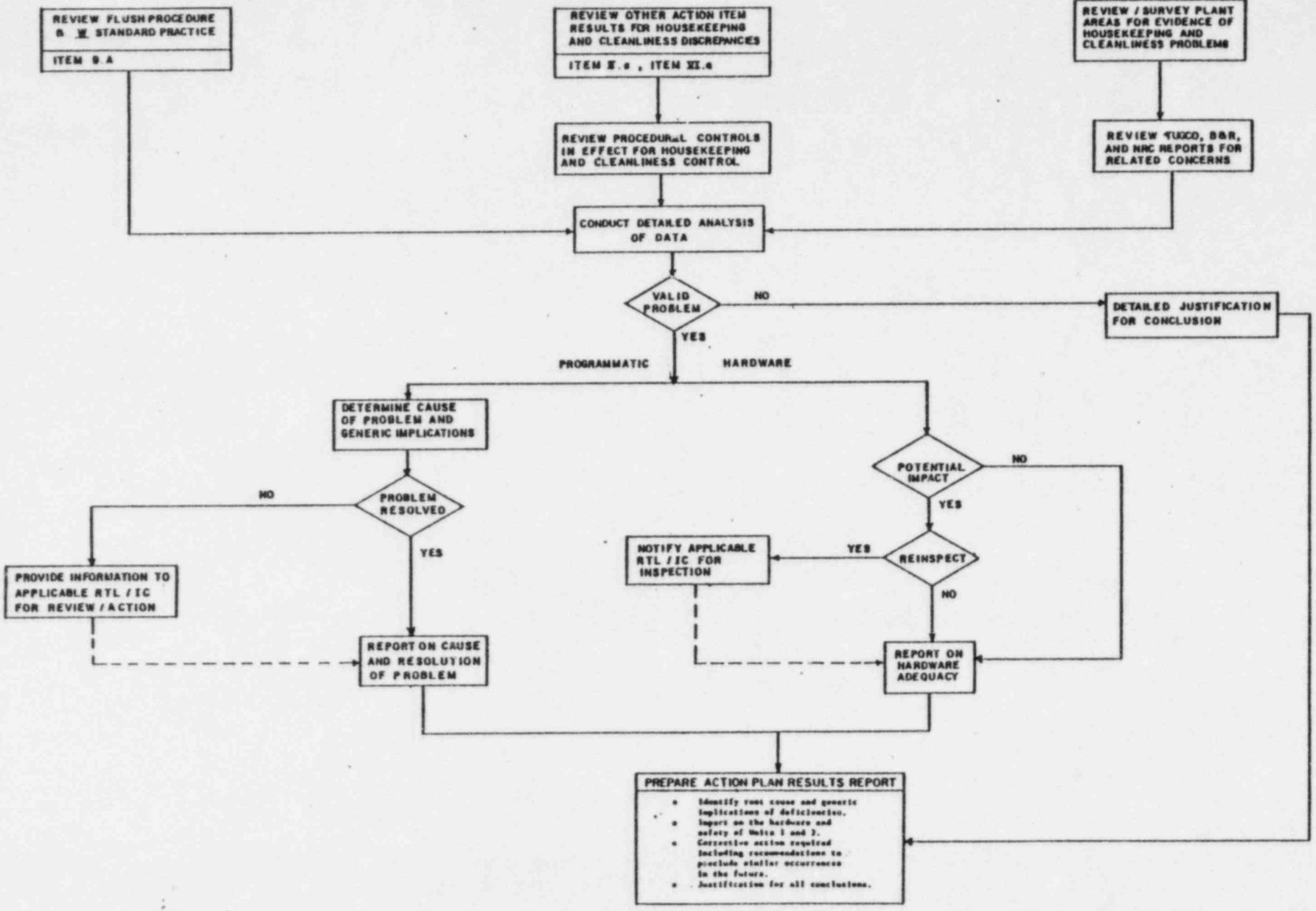
KEY QUESTIONS ADDRESSED

IN ACTION PLANS

HOUSEKEEPING

1. ARE THE CURRENT HOUSEKEEPING AND SYSTEM CLEANLINESS PRACTICES ADEQUATE?

HOUSEKEEPING



or concerns that might have been documented there in terms of NRC reports, TUGCO reports and Brown & Root.

We'll look at the past procedures and action items and try to make a determination are they adequate, were they adequate in the past, and if not, could they have in fact impacted the hardware.

Basically, the same type of logic coming down from that.

Okay. That completes --

MR. LIVERMORE: Does this housekeeping include material protection, too?

MR. HANSEL: No, it does not.

MR. LIVERMORE: Okay.

MR. HANSEL: Are you talking about the valve shop primarily?

MR. LIVERMORE: No.

MR. HALE: Contamination materials in work areas. There's two parts in that.

MR. LIVERMORE: Snubber protection out in the plant, ongoing work, that type of thing.

MR. HANSEL: It's not included in this one. We'll make certain it's picked up in some of the other hardware issues.

MR. LIVERMORE: When you come to housekeeping, that's usually inclusive in the word

"housekeeping." It's not just keeping vessels clean and that type of housekeeping. Using this protection material, even the handling of material, that type of thing.

MR. HALE: I think we grouped it that way in our letter, so I assume that you are talking about the same thing.

MR. HANSEL: We'll pick it up and make sure.

(A copy of Viewgraph No. 37 follows and is made a part of the record.)

MR. HANSEL: Now let's talk about the fab shop. As I indicated earlier, Vic Hoffman from Stone & Webster is helping us, he and some folks from Stone & Webster.

We really broke down -- I think this is right out of the January letter -- Items A through G concerning problems in the fab shop, fabrication shop.

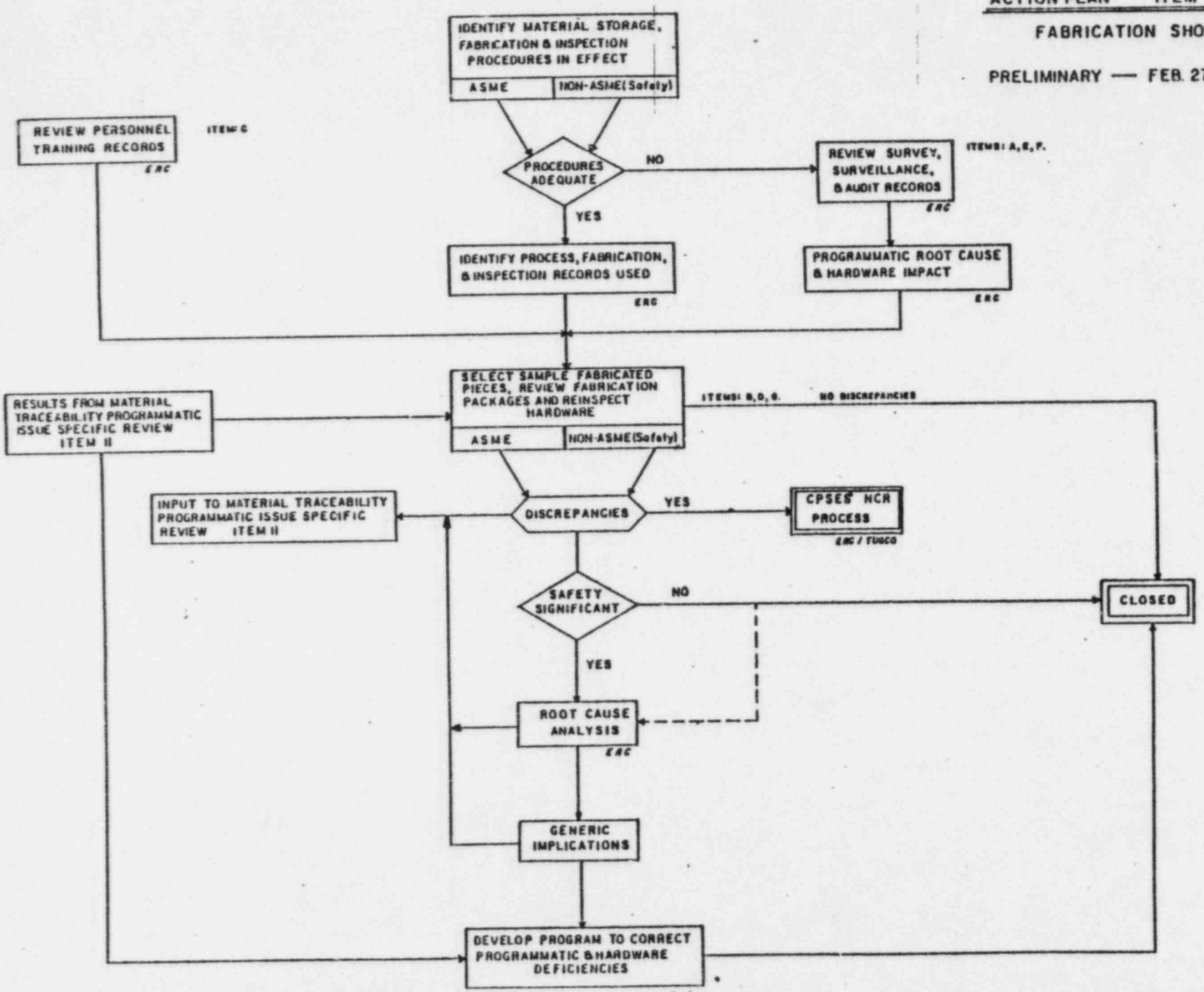
I'm going to address all of those, but I am going to address them at different times in the flow plan. I'm going to address them individually or in different pieces.

In the fabrication shop, there is

ACTION PLAN ITEM

FABRICATION SHOP

PRELIMINARY — FEB. 27, 1985



work done both by Brown & Root and TUGCO, ASME and non-ASME.

We are going to go look at the history and currently at what procedures govern the control of materials in that fab shop, and operations. We'll go through the same logic, were they adequate or not.

We will then be going back on Items A, E and F, which primarily deal with materials storage and records, scrap file, intermingling the hardware and that kind of stuff.

We are going to go back and look to see what kind of surveillance inspections were done and what records were kept of those and do an analysis.

We'll also look to see what audits were conducted in that area, either by Brown & Root, TUGCO, NRC and outside activities. We'll gather that information.

Based upon that, we may find that we have some programmatic issues or some root causes that may come out of there, some issues.

We also want to identify the processes and the fabrication type of records that are generated in that area, and inspection records for the various types of work; what actually is produced in

there in terms of quality records.

We are then going to -- where we can, because a lot of the hardware is covered up and no longer accessible. We then propose to take a sample of fabricated pieces that came out of there.

Now, there's a lot of individual material that comes out of there, an I-beam of a certain length, certain types of straps and so forth, individual pieces.

We'll take primarily assemblies, a sample of those. We'll review the packages and reinspect the hardware to see if in fact we've got a traceability there of the operation that took place in the fab shop, inspections involved, what actually took place. So we are going to go look at that, and we'll do that both ASME and non-ASME.

I don't think we're going to find an awful lot in non-ASME work, but we may. We will concentrate there on safety-related type of stuff, if we can identify it.

Do we have discrepancies? If yes, we are going to get right into the NCR process through TUGCO. We'll analyze those discrepancies for safety significance.

We, also, out of that discrepancy

block may find in those inspections material traceability problems. If so, that will spin off and be considered in the material traceability issue plan.

If the problems are non-safety-significant, we're going to close them. If they are, we are going to look for the root cause, generic implications and prepare a set of recommendations on how to fix things.

The generic implications and root cause, however, may spend you off into other document reviews and other hardware reviews. We don't know yet.

That's the way we plan to attack the fab shop.

MR. LIVERMORE: One question. You talk about accessible. I guess I've heard this before, too. Of course, everybody's interpretation of what accessible means is certainly different, too.

In your detailed action plan here of the specifics, are you going to define exactly what you mean by accessible and non-accessible?

MR. HANSEL: Yes, we will. To me, it's if I can get to it without major destruction or disassembly.

MR. LIVERMORE: The big questions, fo course, always is insulation, if you remove it or

don't you. There are certainly different points of view on that.

MR. HANSEL: That's one we'll have to chew at the time.

MR. LIVERMORE: It certainly has to be defined.

MR. HANSEL: If the type of attribute in there could be safety significant, if we could identify certain population that is accessible, if we find those okay, we won't go in. If we don't find it there, we may have to. We'll identify that in the action plan.

MR. LIVERMORE: I guess the same thing as we've said before, too, what's the definition of safety significance. You have to certainly define that.

The other question I had here, too, this whole chart is in essence related specifically to the pipe fab shop, that specific fab shop; is that correct?

MR. HANSEL: Yes.

MR. LIVERMORE: Again, that reflects where we've pointed out certain problems, suspect problems certainly in this fab shop. My next one is how many other fab shops do you have on that site; do

you intend to look at those, too?

MR. HANSEL: The answer is yes.

MR. LIVERMORE: I don't see that here. Again, I think that's alluding to what I mentioned once before. I don't see that particular block up top that says you will look at other fab shops.

MR. HANSEL: If we're producing hardware there that's going to have any impact on safety, we're going to look at it.

(A copy of Viewgraph No. 38 follows and is made a part of the record.)

MR. HANSEL: Now, on these hardware plans, we do have action plans prepared. As I said, they are in rough draft form. They have not been approved by the Senior Review Team yet, but the words are attached to the flow charts. We are a quantum jump ahead in this area.

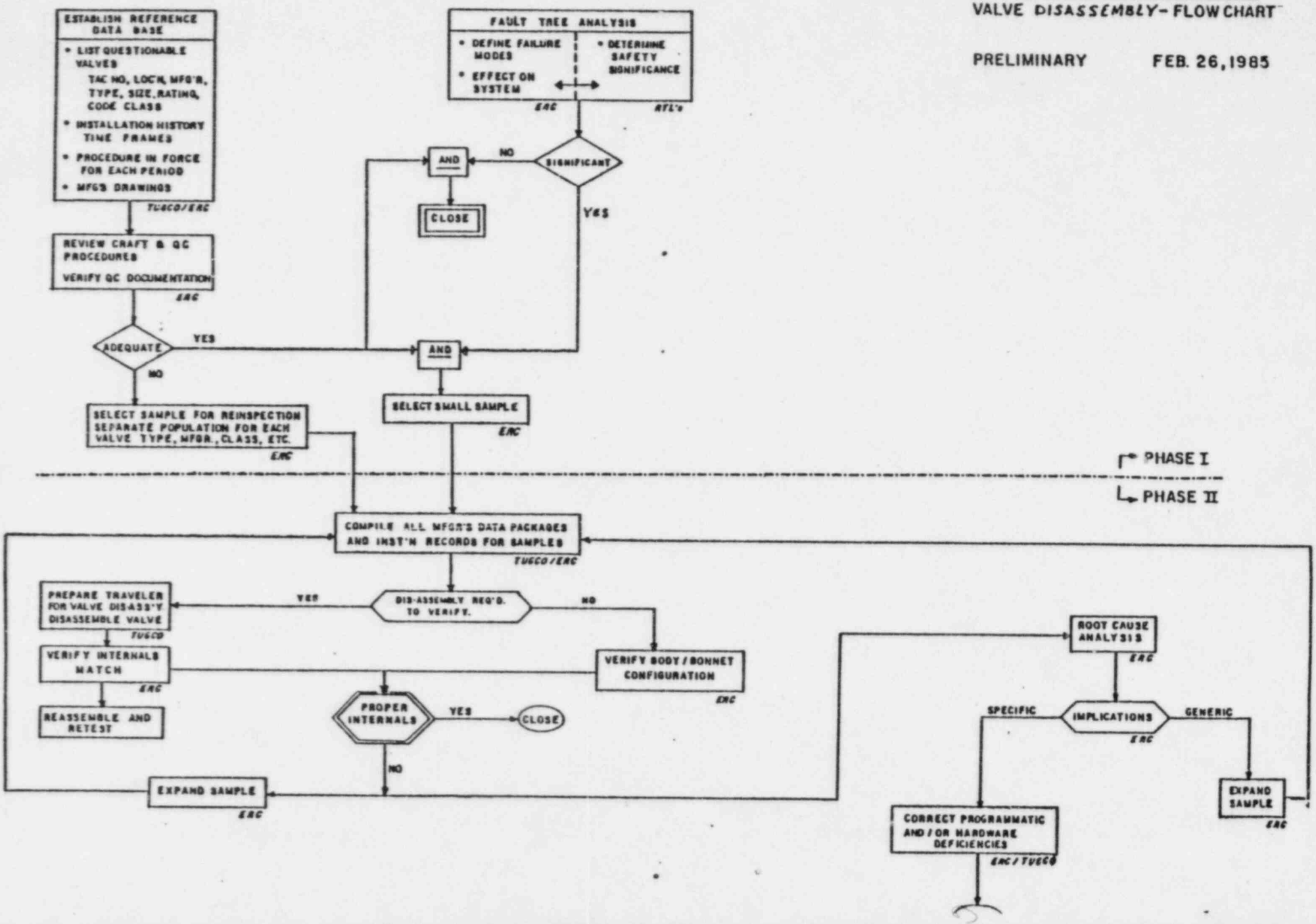
Here we are talking about the valve assembly/disassembly problem. Now, we don't want to go out and just start taking valves apart.

What we are going to do -- This is just an example. Don't use this as a piece of engineering paperwork. We plan to take the families or the populations of valves that are used at this

ACTION PLAN ITEM 7

VALVE DISASSEMBLY - FLOW CHART

PRELIMINARY FEB. 26, 1985



plant. Then we are going to -- of course, we are going to go through the description, valve type, safety classification, service rating. This is the key block.

I then want to identify with engineering what are the possible ways you can intermix parts, what will fit. Then we want to look at that. If that were to happen, is there a potential failure mode associated with that?

We may find that there are no failure modes even enough to worry about.

What will be the effect on the system and what's the consequence to safety? Then there will be a further add-on there, if we do find some failures that could exist that could result in safety significant system failures, then I would say how can we expect it? Can we do it externally? Can we do it with X-ray?

Can I prove it's okay through past test records? I then would get into the analytical phase as to how -- You don't have this in your handout, incidentally; it's a working tool.

But that's what is meant in this very top block. I am trying to bound this thing down to something that's reasonable. There are many, many valves out here. I can't see going and tearing them

apart and involving a lot of tests if we don't have to.

So I want to first look at -- Again, to repeat: What are the possibilities, and out of the possibilities of wrong assembly, what can give me a failure? What's the impact of the failure? Does it impact safety? Do I need to go inspect or test it?

MR. CALVO: Excuse me. Don't you normally test all those valves during the preoperational testing?

MR. HANSEL: Yes, but you may have some --

MR. CALVO: You may want to consider that as a --

MR. HANSEL: We will. We are going to look at that, but there may be some -- There could be a latent failure mode in there that could come out due to heat-sensitive parts or orientation or operation. We don't know yet. We are going to have to go through that scenario.

MR. CALVO: You also may want to consider the fact that you test those valves over the life of the plant, because of the technical requirements. So you would have a continuous test in there through the life of the plant.

So some of those problems that

you may worry about may come up sometime in the future.

MR. HANSEL: Yes.

MR. HALE: Are you going to be looking at the potential invalidation of the code stamp?

MR. HANSEL: We'll have to look at that as well. Yes, that's an important consideration.

If we've got that, then we've got another problem.

MR. HALE: It's a different problem.

MR. HANSEL: It's a different problem, violation of Code. The valve may still be okay. We'll have to attack that issue.

So the purpose of that approach is to get this thing down to the smallest amount of inspection or tests that we have to work on.

MR. LIVERMORE: The other input, too, is the failure to take corrective action when this was identified. You are feeding that back into your action plan on corrective action, too.

MR. HANSEL: Yes, that's right. Now, Cliff, to get to some of your concern, we are going to have to gather a database of questionable valves, type, tag number, location. We may not -- How do you determine if certain parts were intermingled?

Some identifying marks may be on bonnets, stems, valves, packings, et cetera, that we are not familiar with. We are going to have to go back and talk to the supplier and he may be able to tell us some identifying marks and could give us the lot numbers, serial numbers, periods, et cetera, to help zero us in.

So we will be looking at installation history in terms of time frame. You may find in this one -- again, it's part of the boundary. We may find that you only had certain valves disassembled at certain time frames and you couldn't get them intermingled. Or it may be that you had them all disassembled and all the parts together and they could have all had the faults.

We are going to look at that in terms of, again, time frame, craft, the procedures that were in force, and that's all part of this database. How do we attack that? And we will look at the procedures that were used and make a determination if they were adequate, yes or no.

If not, then we may have to get into a sample reinspection. Are those failure modes that could give us a problem operationally or historically?

I am pretty well down through this part of the tree right here, down to this sample now. This could be zero or it could be some size.

We then would compile all the manufacturer's data package and installation records for those items to be inspected. You may have to disassemble. You may not have to. We don't know yet.

We've got disassembly required, yes or no. If it's no, we may be able to get to the body and bonnet and verify the configuration and be satisfied with that. If it's yes, then we'd have to get back and write paperwork to go get that done, because we are invalidating tests, assemblies and a number of items.

Actually go through the verification of the internals, expand the sample as required, and go on from there. Any problems that come out of that, go through the root cause and generic implication piece.

So that one is not going to be easy. I'm hoping that the matrix on the front end will tell me I don't have a hardware problem, but as Cliff reports, I may have an end stamp problem on the hardware.

Pipe supports. Now, on pipe supports,

we are working this one very close with Howard Levin and the effort that is taking place on design assurance to see what happens there.

We are not going to jump out -- we are working parallel with him, working very close. We don't want to jump out too quickly here and go do a lot of inspections we may not need to do.

We'll see what happens in terms of pipe supports, and he and I will be working the sampling plans together, attributes, the whole nine yards.

MR. LIVERMORE: Do you want to refresh my memory? Mr. Levin, what is he doing?

MR. HANSEL: Howard Levin started out at the Review Team Leader for Civil, Mechanical and Structural.

Due to some of the later concerns on design adequacy and pipe supports, he's working that almost exclusively now in terms of looking into some of the Cygna reports and other references going on in that area.

MR. LIVERMORE: But he's working that from a design aspect, design QA?

MR. HANSEL: Design adequacy, design QA.

MR. LIVERMORE: Unstable supports, that

type of thing?

MR. HANSEL: Yes.

MR. LIVERMORE: Are you saying, then, that apart from the January 8th letter on pipe supports, those findings you are throwing in under his jurisdiction; is that what you're saying?

MR. HANSEL: We are going to work them together. We have some new considerations taking place. John, do you want to address that?

MR. BECK: Yes. We want to be sure, Herb, that we don't duplicate an inspection activity, for example. If it looks like it's coming down from the QA/QC piece alone, and subsequently it comes down through the design adequacy; and we want to do it one time, not twice.

We want to make sure that what you've heard alluded to throughout the discussions this morning, that all the Review Team Leaders work very closely with John Hansel, and he is only illustrating that point and brought it out by virtue of the fact that design adequacy is now a consideration of CPRT, and it is certainly specifically directed in this area right now.

MR. HANSEL: He may end up wanting to do some inspections.

MR. BECK: I'm sure he will.

MR. HANSEL: I'm sure he will. As John says, we will couple ourselves with that and be a part of that. We'll take that data, as well as our own data.

This action plan, the logic is right, but it may get revised based upon what he does.

(A copy of Viewgraph No. 39 follows and is made a part of the record.)

MR. HANSEL: My main part is that we will make certain that we are well glued together in terms of what we look for and how we go about it, what the sample is and so forth.

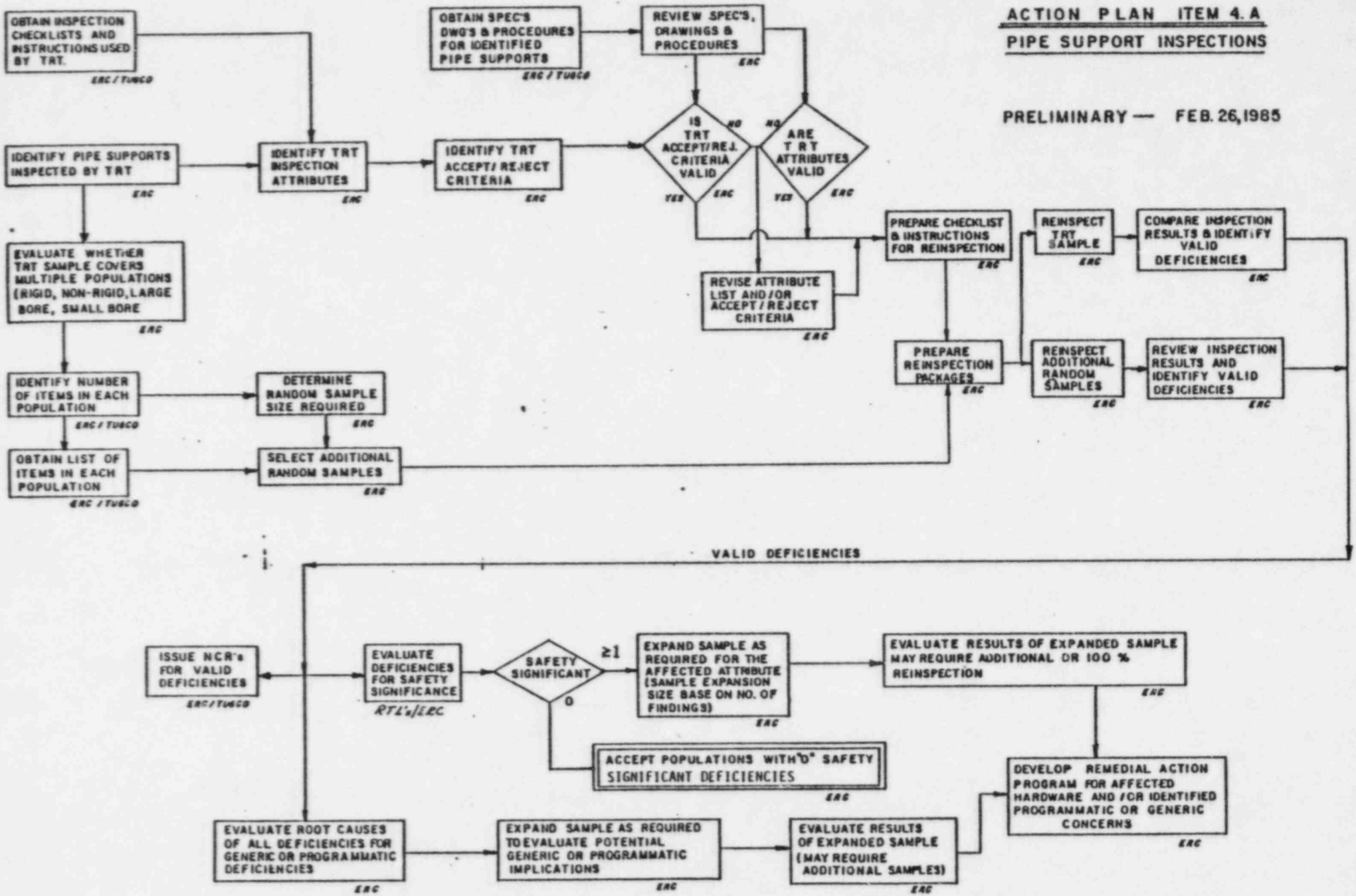
There are two main flows associated with this one I think we need to talk about. We start at the very top left. We want to take the material, Herb, that you and Cliff and others used when you looked at pipe supports.

It's my understanding that you used the TUGCO IR's that were in force at that time. The criteria should have been the same.

So we are going to take and identify the attributes that you looked at and what was the acceptance criteria used by you folks, and then

ACTION PLAN ITEM 4.A
PIPE SUPPORT INSPECTIONS

PRELIMINARY — FEB. 26, 1985



we are going to be saying, "Was that valid," not that we are questioning what you did, but we want to merely say, "Yes, we are in agreement with TUGCO and with the design drawings, because we are going to start with the specs, drawings and procedures for pipe supports at the very top.

We'll be reviewing those. This is a part of looking at that QA piece, the translation of drawings to inspection reports, inspection requirements. We will be looking for a good translation and agreement between what the engineer wanted versus what was inspected. We'll be doing that right here.

Then bucking that back, we may find that you guys and TUGCO had the wrong paperwork, or the IR's were not current. So that's a part of all this.

We then would be preparing a checklist and set of instructions for some reinspection, based upon the drawings and specs and the past history, and we would be getting ready to do some inspection.

Over and above that, the sample of hardware that you looked at was rather small. You were limited in time.

We would look at total populations

of pipe supports, and we would look for homogeneity in the population. I think we are coming down to where that all may be one population, maybe two, as compared to breaking it down into rigid, non-rigid, large-bore and small-bore.

There we will be looking at the processes, craft, designer and so forth. We are looking at homogeneous samples.

Once in each of those samples, we will determine the sample size and selecting some additional random samples, over and above what you did; prepare the instructions and checklist for the inspection of that hardware, and we would reinspect what you did and also the additional samples.

Again, there we are after quantification and bounding. You found a number of defectives. We want to define specifically how defective were they; two inches versus ten inches, two inches versus a hundred, or whatever.

So we will be, through this process and through this inspection, looking at what you did, plus an additional sample, trying to really quantify those discrepancies.

Then we are going to evaluate those for valid deficiencies. That doesn't mean that

any deficiencies you had may have been invalid. That means, was there another piece of paper in either the engineering system or in the nonconformance system that may have accepted that condition, which would then say that that deficiency that you identified or we identified was not valid.

We then would get with the other Review Team Leaders and look for safety significance, and we would make certain that if we have new discrepancies, that NCR's are generated and put into the TUGCO system.

So we would then look for safety significance of the defects. We do not have the details of the sampling plan worked out yet, but basically the pass/fail on the sampling plan would be if we found no safety-significant discrepancies in the sample, we would pass it.

If we found one or greater -- as I say, this number is not final yet -- we would expand the sample as required and go on from there and look for additional hardware; analyze the results of that, and we are back into the root cause and generic implications.

In expanding the sample as required, we may get into other hardware areas with the

generic implications.

Any questions on that? As I say, the logic is there. We may have to change it when we see what happens in the case of design assurance.

MR. LIVERMORE: One question on the select additional random samples. That seems to be predicated on what you find from what the TRT came up with, the way it is; is that correct?

MR. HANSEL: No. It's meant to be a total separate -- this piece right in here?

MR. LIVERMORE: Yes.

MR. HANSEL: That's totally separate. It will be a random sample, and we will be inspecting to these checklists that come from the released engineering drawings and specs.

It may or may not be back against the TUGCO criteria, because we may have found a problem with that. Back to my toolbox chart, if we found a problem with QA in the translation, we are going to go inspect what we need to inspect, based on the released drawings and specs.

MR. LIVERMORE: Okay. One other question. Where you talk about what the TRT found here, does that also include Region IV's hardware inspection? They did quite an extensive hanger reinspection, too.

MR. HANSEL: Yes. Yes.

MR. LIVERMORE: Okay.

MR. HANSEL: Any more questions on pipe supports?

(No response.)

(A copy of Viewgraph No. 40 follows and is made a part of the record.)

MR. HANSEL: We are hoping for a piggyback effort here. We may not be able to, but we are going to try.

We are going to go review the specs and procedures for installation and inspection of Hiltis and what are the critical attributes.

Now, we are currently inspecting cable tray hangers, as a result of a Region IV concern. A large number -- well, I think 500 cable tray hangers were as-builded by Ebasco and we have our inspectors, independent third-party inspectors out inspecting those as-builts now. So we are looking at a fair-sized population of Hiltis in that inspection of cable tray hangers.

That's what is meant by this block right here.

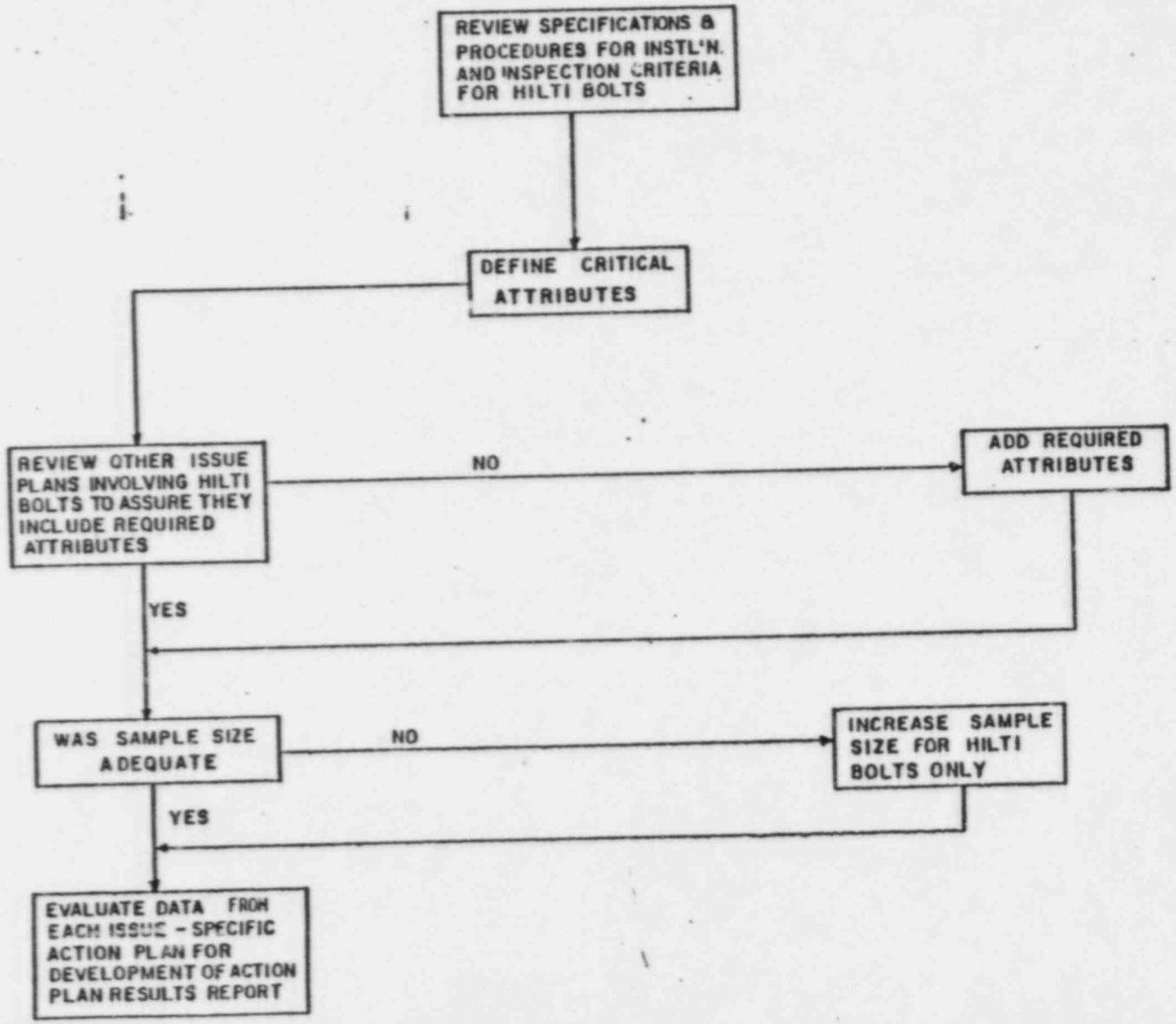
We have to look to see if the

(40)

ACTION PLAN ITEM

HILTI BOLT INSTALLATION

PRELIMINARY FEB 26, 1985



attributes, and I think they are one-for-one now that they are okay. We have to look at the attributes that are being inspected for in that sample plan. If they match up with what's required by the drawings and specs, we're in good shape.

If not, then we may have to go back and add attributes and maybe do some more inspection.

Also, in terms of Hiltis, based on what we've got in that population of cable tray hangers, if it's adequate from a statistical standpoint, we'll be okay. If not, we may have to expand the sample and do some other inspections of Hiltis and, of course, evaluate the data and close it out from there.

So the action plan is written. We are in the process of looking and analyzing those other inspection checklists now and populations and trying to make a determination if it is adequate.

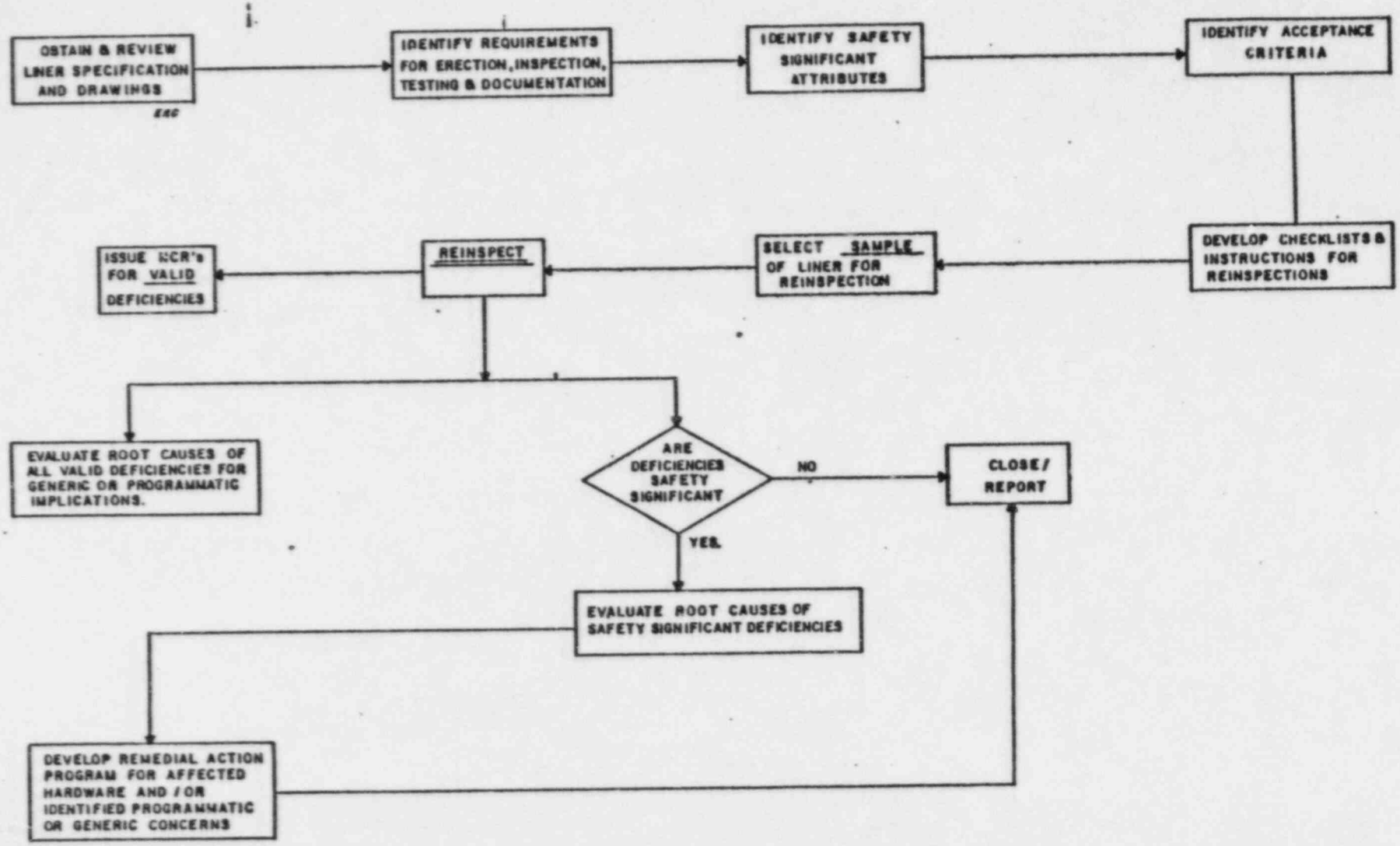
(A copy of Viewgraph No. 41 follows and is made a part of the record.)

MR. HANSEL: We are going to take and pull -- you can look at the fuel pool liner and the problems there to be indicative of problems in other

ACTION PLAN ITEM . A

FUEL POOL LINER

PRELIMINARY — FEB. 26, 1985



places or it could be isolated in the fuel pool.

So we are going to attack this one a little bit -- slightly different.

We are going to start with the fuel pool and we're going to find out what specs and drawings govern the fabrication and assembly of that. What are the requirements for erection, inspection, testing and documentation; look at the safety-significant attributes; what's the acceptance criteria; select a sample of the liner for reinspection, if we can get to an adequate sampling. We think we can.

If we find problems in there, we're going to write deficiencies. In this will also be, and it's not imperative, but there will also be a document review of what we're looking at, looking for the documentation.

Do the reinspection. Do we have deficiencies and are they safety significant, and work down through that particular area.

If we cannot find enough hardware in the fuel pool liner to look at, then we will go look for other hardware that uses the same processes, the same craft, the same type of inspection attributes, conducted in about the same time period to get a representative sample of that kind of concern.

Hopefully, we'll find it in the fuel pool, but if I don't, then we'll have to go look for something else that's very similar and at about the same time.

MR. LIVERPOOL: I guess one thing I don't see in this fuel pool liner. There's really two items here, two major provisions, and one, of course, is the hardware, whether what's there is safety significant or not, and the other one, of course, is the actions and imaginations of the QA system while building that and while inspecting it, and I think that's something that has to be addressed head on.

I don't see that here.

MR. HANSEL: Well, I don't know how to get my arms around that, except to verify that the hardware is out there. I've wrestled with that problem, and if I go inspect the hardware and I find the hardware is acceptable and the documentation associated with it, that's what I have to hang my hat on.

I don't know how to go about to research or analyze the other kinds of problems. But if I find that the hardware is okay, then I have to almost draw the inference that the system must have been okay.

MR. LIVERMORE: Well, I won't say any more.

MR. HANSEL: I'll be willing to talk with you further, and if you've got some ideas, I'd be glad to listen to them.

MR. LIVERMORE: Yes. What I'm saying is our feelings of that, because certainly the actions of a QA system in place at that time that was supposedly operating to Appendix B certainly becomes safety significant in themselves, their actions.

It certainly reflects on other things they did out of the fuel pool. If that's the way they worked there, I would assume they would work somewhere else the same way.

It's something you have to address from a safety significant standpoint, quality safety. So that's two big areas to me.

MR. HANSEL: We are looking at a lot of hardware. With all these plans, plus the other Review Team Leaders, we are looking at a lot of hardware. I think we may be able to -- We will address a lot of things.

But in the fuel pool liner, per se, I don't know how to go about it, except to look at the hardware. If I find the hardware to be good,

then I almost have to come from there. But we will, as evidenced by the other plans, we are going to be looking at a lot of hardware.

(A copy of Viewgraph No. 42 follows and is made a part of the record.)

MR. HANSEL: This addresses electrical raceway supports, and this gets into the other plan.

The dotted lines address efforts being taken on another program in response to Region IV, and that program basically talked about as-built in the cable tray supports in Unit 1 and Unit 2.

We in fact completed total evaluations and we are well on our way of looking at that program.

That program has Ebasco going out and developing as-builts for 500 cable tray hangers in Unit 1.

We then, the independent third-party inspectors are inspecting those cable tray hangers.

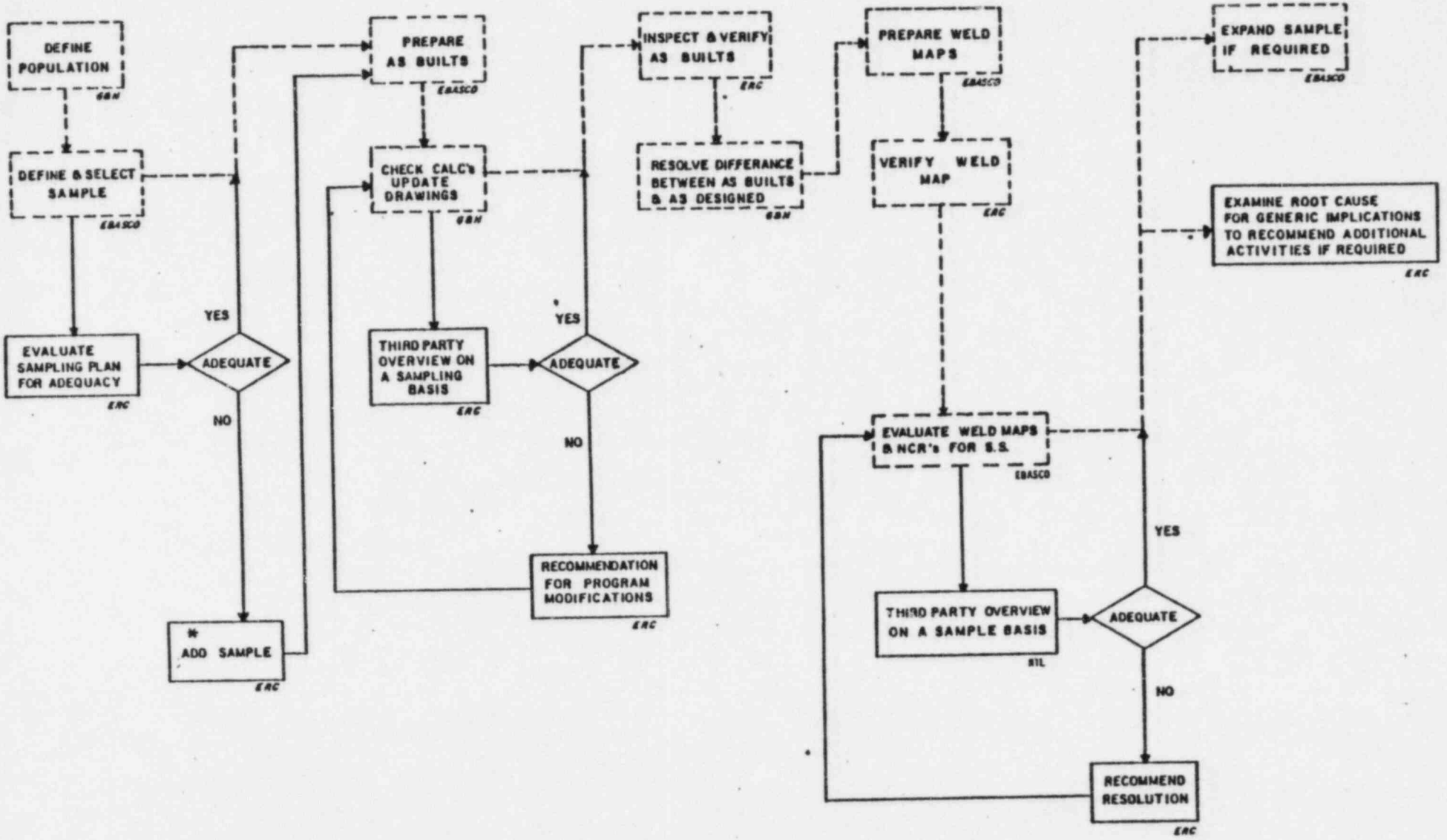
Gibbs & Hill, then, is checking the calcs and updating the drawings, inspecting the calculations and updating the drawings.

We are also now -- and here is

ACTION PLAN ITEM

ELECTRICAL RACEWAY SUPPORT INSPECTIONS

PRELIMINARY — FEB. 25, 1985



* MAY NEED SAMPLES FOR CATEGORY I CONDUIT SUPPORTS.

----- = ON GOING CABLE RACEWAY SUPPORT PROGRAM.

the inspection and clarification of the as-builts.

We are now being asked and we are going to prepared weld maps on those cable tray hangers of any discrepant conditions that we found.

Let me start over again. So that's the plan on cable tray hangers. We are going to look at their sampling plan for adequacy. Their sampling plan was not totally statistically based.

They wanted to sample different kinds of hangers in each building, and they got a good representation. Our statistician is looking at that to see if we are satisfied from a statistical standpoint.

If we are, then we'll use that. If not, then we may have to change the sampling plan and either do more as-builts or more inspections. We are going to look at that and see if we are satisfied with it from a statistical standpoint.

The as-builts are prepared. This process, I believe, is finished now, and we would have a third-party overview on a sampling basis. This would be the other Review Team Leaders, not ourselves.

We would do an overview of that process by Gibbs & Hill and Ebasco with our other Review Team Leaders.

If we found that that process was okay, then we go through this process, and this is well on its way. All right.

There will be a third-party overview of that process to where they are evaluating the weld maps, the as builts and any discrepancies that we find for safety significance; and our other Review Team Leaders will be overviewing that to make sure we are satisfied with that decision process.

If we find that that's not adequate, we may recommend some changes and then start all over again.

Out of all that, if you find some safety significant discrepancies, you could end up expanding the sample, and you are certainly going to have to do a root cause, generic implication analysis.

Now, this will get -- we will assure ourselves that we have an adequate sample to look at cable tray hangers. either through the Ebasco process or by adding some ourselves to evaluate that hardway.

MR. LIVERMORE: You say this Gibbs & Hill/Ebasco effort here of preparation of as-builts is in the process now?

MR. HANSEL: Yes, those as-builts are built and we've inspected probably 75 or 80 percent of those cable tray hangers now. This process here is very close to being completed.

We have not done this; we'll have to back in and do that.

MR. LIVERMORE: Excuse me a second.

MR. HANSEL: Okay.

(A copy of Viewgraph No. 43 follows and is made a part of the record.)

MR. HANSEL: This is the chart that I started with. As you can see from these action plans and from what have come out from the other Review Team Leaders, we hope to be able to draw some conclusions about the adequacy of the over-all QA/QC Program.

The first and most important piece going through would be to fix any hardware discrepancies we find.

So we will be drawing data in from all of our programmatic issues, our hardware issues and the other Review Team Leaders.

As I indicated earlier on, our first emphasis will be to go fix any hardware that needs

FINAL OVERALL EVALUATION OF QA/QC PROGRAM

RESULTS OF INDIVIDUAL QA / QC PROGRAM EVALUATION

- QC INSPECTION
- AUDIT PROGRAM
- DEFICIENCY REPORTING
- 50.55e REPORTING
- MANAGEMENT ASSESSMENT
- MATERIAL TRACEABILITY AND CONTROL
- DOCUMENT CONTROL
- CORRECTIVE ACTION
- HOUSEKEEPING
- EXIT INTERVIEWS
- TRAINING CERTIFICATION OF INSPECTORS

INDIVIDUAL QA / QC HARDWARE EVALUATION RESULTS

- FAB SHOP
- VALVE DISASSEMBLY
- PIPE SUPPORTS
- HILTI BOLT INSTL'N
- ELECTRICAL SUPPORTS
- FUEL POOL LINER

RESULTS FROM OTHER REVIEW TEAM EVALUATIONS

- CIVIL / MECHANICAL
- DESIGN ADEQUACY
- TESTING PROGRAMS
- ELECT/ INSTRUMENTATION
- PROTECTIVE COATINGS

EVALUATION OF ALL REVIEW TEAM RESULTS AS RELATED TO OVERALL ADEQUACY OF QA / QC PROGRAM

ADDITIONAL INFORMATION REQUIRED

YES → **COLLECT ADDITIONAL INFORMATION** → EVALUATION OF ALL REVIEW TEAM RESULTS AS RELATED TO OVERALL ADEQUACY OF QA / QC PROGRAM

NO

CURRENT QA/QC PROGRAM ADEQUATE

NO → **RECOMMEND UPGRADES/ IMPROVEMENTS** UNITS 1 & 2

YES

ADDITIONAL HARDWARE/ GENERIC ISSUE EVALUATION REQUIRED

YES → **CONDUCT ADDITIONAL EVALUATIONS** UNITS 1 & 2

NO

PREPARE ACTION PLAN RESULTS REPORT ON OVERALL QA/QC PROGRAM

- Identify root causes and generic implications of deficiencies.
- Impact on the hardware and safety of Units 1 and 2.
- Corrective action required including recommendations to preclude similar occurrences in the future.
- Justification for all conclusions.

to be fixed. We'll assure ourselves collectively that we've looked at enough hardware that we can make some statements with statistical backing about the adequacy of the hardware compliance, and we'll be making recommendations for everything from here forward.

That's how we plan to go after the QA/QC issues.

Any final questions?

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MR. LIVERMORE: I guess I have a couple of comments here, before we throw it open to everyone else.

One of the items you mentioned there, you said you were moving out and going down the road with this, and you were hoping for some sort of, I don't know whether you called it, recognition, or it's certainly not a pool at this stage, it's something, before you got too far.

Really, all I can tell you is that don't assume tacit approval because no one disagreed with you here. I like these type of presentations where the outline of the material is submitted to us ahead of time so we can read it, and we know what you are going to talk about, and have our questions all formulated.

Maybe in the next meetings, for the ones following on here it'll be taken care of that way. But I like to read these things and really digest the details from the transcript and fully understand them, and then try to formulate a group of questions from that. So, you'll certainly be hearing that aspect.

And I certainly think one of the detailed things here, I think, I'll tell you right now, I don't think we agree with you too well on the

qualifications certifications where you talked about other disciplines. I think you should be looking at the other disciplines historically. I think we pointed out enough problems in our January 8th letter you certainly should be looking at that.

Now, I want to tell you there off the top, we certainly can talk about that, if you don't agree.

Again, I think that we mentioned that you certainly should look at the operational QC training. I won't really say any more than that except they are the same people, the same Brown & Root people, same attitudes, et cetera. Now, I know our operations people have found that in pretty good shape, and, hey, that's great. That may be the case, but I think you should certainly follow up on that.

MR. HANSEL: That's intended.

MR. LIVERMORE: All right.

MR. HANSEL: We plan to do that.

MR. LIVERMORE: A lot of cases here we didn't talk about Unit 2 at all. There's a lot of work going on out there now, it's still going on, and I realize you are still in your action plans, et cetera, but it looks to me like we're getting down the road quite a ways here, and Unit 2 work is still going on,

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yet we still do not have any overall details on action plans overall, integrated recovery plans, anything like that, details exactly.

What I see so far off the top of my head is you're going, you're heading right off into areas here that, the things that were in our January 8th letter.

MR. HANSEL: But each of those has the capability in there to expand, Herb, if we see we need to, based on --

MR. LIVERMORE: It know, and I think --

MR. HANSEL: -- either an inadequate sample size on your behalf, or if we see problems.

MR. LIVERMORE: -- we've already -- I would again emphasize you don't wait until down the middle of your action plan to address that. I think it should be right off the top, get right into that, into the other areas, and not make it as a result of a yes and no that comes down. I know some places you can go, and you can skirt it completely if you read your action plan to the letter of the law.

Cliff, did you have any comments Go ahead.

MR. HALE: Quite a lot. The approach that you've given, kind of reminds me of a program plan,

QA Program Plan, which gives you the, you scoped your approach to this thing and some of the work that you've already accomplished. The thing that I guess still remains are the, using the same analogy, the procedures to be developed, and the implementation of the procedures to be, the effectiveness of the implementation procedures.

And I think until we get further along, I don't have any real big pains with what you presented this morning. How well it goes together and how well the output comes is really going to be the proof of the thing, to the kinds of places that you could, you know, that you could trip up in a meeting such as this is the thing that Herb mentioned a moment ago about accessibility. Some of it could be viewed inaccessible if it's in concrete, or if it's in a sealed room. Well, there's going to be someplace in between, but until we see what those criteria are it's, it's going to give us a great deal more information about the way --

MR. HANSEL: I think the thing that has to happen, do you have an idea when we'll get your SSER?

MR. NOONAN: I'll address that, John, in a few minutes.

MR. HANSEL: I'd like, if the process will allow it, to get one-on-one now and start looking at action plans. We really are in the data-gathering stage, mostly the first block or so, but I'd like to get down now to start looking at action plans. We have them on the hardware issues pretty well, you know, they're close.

We'll be going, talking to those further with the Senior Review Team here maybe this weekend. But I'd like to get to the point to where we can bounce those off, and to make sure that we're both satisfied.

I think we have a good approach. And, again, I want to emphasize that the primary point that I'm aiming on is to, if the hardware is right I'm going to have to almost assume that the systems were okay. Maybe not as good as some folks would have liked to have seen them, but they were at least adequate.

So, that's the only way I know to attack this thing, is to go after the hardware, and make that determination. And a lot of the programs, the issue plans were based on that premise.

But, believe me, based on my past experience if it's accessible, we're going to get to it. So, that concern, I don't think, that's

certainly not a concern on my part.

MR. HALE: I was just using that as an example, of course, but until you see the whole package, I mean the complete thing it's, as Herb said, we're not going to sign off on the thing, I don't believe.

MR. HANSEL: No, I wouldn't want you to. No, this is a very quick presentation here this morning, and it's merely meant to give you a conceptual idea of how we are starting. You now need to see the written word and the details, and we're progressing along developing those.

MR. HALE: And, in the meantime --

MR. HANSEL: We're not doing anything that's irreversible, in the meantime. We are looking at other programs that are in effect, like Ebasco on the cable tray hangers,and we are working with Howard Levin on the design adequacy thing to make sure that that's all dovetailed together.

So, we're not getting down to a point to where we're doing unncessary work, but we would like to proceed with some haste, as well.

MR. BECK: If I can address one of the things Herb said --

MR. CALVO: I don't know, I guess you

are not so involved with the QA/QC, my impression is that maybe that's the way you had to do it, but you have selected my way, component-type of action plan. You may want to consider, or to entertain, to look a little higher, find out what could work out on this plan. What kind of preoperational testing. So, the NCR doesn't look good, where the preoperational testing can be a good backup for the NCRs.

Some kind of way, right on the front end to be a screening there to establish what, if this is no good, what else there that is good. How can I say it, don't come down to the component level. Try and resolve all the problems at the system level.

Maybe you want to get the components and get into passive and active. An active component, most probably this thing has been tested in the preoperational testing. And the preoperational testing can duplicate the condition that happened in the same basis event, you know, the paperwork may be bad, but it passed that test and you got a very good assurance of that it's going to be made that way.

Also, keep in mind that whatever you don't catch, you've got this technical specification requirement that you continually test all these active components.

Again, I guess my impression is the, use the issues by the Technical Review Team, the issues by Region IV, and you have developed a plan according with the issues, tailored to those issues. I think you should go higher than that.

The plant is built. Many things could have been done good on that plant. Use those plans to reinforce when to come down, and check those issues and then concentrate on them. It's looks like you're going to go all the way down to establish safety significance. It looks like you go through all these things. Bring that safety significance up to the top, if you can, and see -- Once you, like you said, if there's no safety significance there's no reason to come down.

Anyway, it's just a thought.

MR. HANSEL: I understand exactly where you're coming from, and that's part of the intent. And I'm an old systems guy, myself, but -- and we're talking to Monty Wise, for instance, in the testing area extensively as we go through this thing, as well as the other Review Teams.

But, the underlying theme of the January letter is the QA/QC Program, so I can't really ignore going down to some degree of level to

see if there might be something else there of generic ramifications.

MR. CALVO: Right. But it, you know, is the adequacy of the installation.

MR. HANSEL: I agree.

MR. CALVO: Is the plant fail safe. Now, the paperwork can be terrific or it can be bad, the end result is whether that plant can be safe.

That's what I'm saying, you have done a lot of the testing and reinspections have been done already, and I'm sure the majority of them will probably be done correctly.

MR. HANSEL: That's another point that we have, and that is that there have been many, many reinspections here, and we'll looking at those, as well as the testing.

MR. CALVO: That's all.

MR. BECK: Herb, I wanted to address your concern about Unit ? and assure you that this is a Comanche Peak effort, not simply a Unit 1 effort. That happens to be where the focus is, because that's where a lot of the initial activity is, and certainly where the plant is essentially physically completed at this juncture, there will be a comprehensive effort to make sure that anything that evolves from that is fed into

on a timely basis, given that evolution of Unit 2 activities.

It's not with blinders on that there is somehow a fence there that separates the two.

MR. LIVERMORE: Okay.

MR. HANSEL: In fact, we have directions from the SRT that do just that, to look at Unit 2 and the operations.

MR. NOONAN: We have a comment from --

MR. HUNTER: My name is Hunter. I'm from Region IV.

In your plans similar to, you pointed out that Region IV had issued some violations on cable tray hangers... We've now got the report out on QA, paralleling this particular, one of the items failure to assess, and one of the items failure to audit.

As you develop your plans, you want to realize that we will be considering enforcement associated with all of the findings that we have, and the TRT has, and realize that if enforcement does come out with any of these items, then you have to address the requirements of that enforcement.

In some cases you mentioned you weren't going to look at past history or maybe you

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didn't want to go back in all the audits.

I think, looking from the enforcement aspects, you need to reconsider some of those thoughts, maybe doing it now or maybe doing it a little later, but it would appear to me that if you are looking from the enforcement, if you fail to audit, if you look at the enforcement aspects of it where you address the three questions in the Notice of Violation, doing that up front may help you pursue the issues very quickly, which I know is what you are interested in.

MR. HANSEL: Okay. Is this Region IV --

MR. HUNTER: Yes.

MR. HANSEL: The report is out now?

MR. HUNTER: Well, the Region IV 84-32 specifically on failure to assess under Criterion 2 program and also failure to audit is out.

MR. BECK: Sitting in my briefcase right now on the way to him.

MR. HUNTER: Okay. As I pointed out, though, out of the TRT, we will take the TRT findings and there are obvious violations of commitments and standards and Codes in there, and we will, the NRC, Region IV, will have to address those.

So keep that thought in mind

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up front, that if you realize you are going to have to answer some of these things, you can start at it now and save yourself some time.

MR. HANSEL: Okay. Appreciate that.

MR. NOONAN: I guess I would like to offer a few comments of my own here.

First of all, I think the meeting today, and also the meeting on last Thursday are very good meetings, from my perspective.

I think Peter Chen's staff and your people have to have that, because otherwise you don't know what the Staff's concerns are.

I think you are going to need more meetings like this, John. This is the first time that his people have seen John's program today. You know, Herb and Cliff will go back, get with some of his people, and they will probably generate some questions that they will have, and this is normal. And the next time we meet you will hear that stuff.

It will happen, and you will be farther along in your program, too, so this kind of interchange will eventually get to the point that when you do have your Program Plan ready for us to look at, then we are ready to look at it and respond to it.

One other thing I'd like to bring

up, and really, I know Howard Levin on the piping stuff, it's new and he's just getting started. When he's ready to talk about it, we'll be ready to sit down with him and address those items.

I think I'd like to see this kind of interchange on a more often basis, and when you are ready, you just let us know and we'll support your meetings; but I do think it was a good meeting.

I guess at this point in time I would like to -- oh, one question. John, you raised a question about the SER's, and I made the statement last week. Basically, the SER's are written. Most of them are in legal review and management review at this point in time.

Herb and his people here have just sat with the lawyers and they are back now putting in comments the lawyers made to them.

I do not expect to see the QA SER before the end of the month, based on the schedule I have now.

I suspect the mechanical SER will come out next, and then the coatings and then the QA/QC, the final. That will be the way I see it today.

It's really -- The delay and

time-consuming aspects are to sit and make sure that all the bases are there for an evaluation. Whatever conclusion the Staff reached, it's all there. So we are spending quite a bit of time on that.

It does delay the process, but it has to be done, I think.

I guess I don't have any other comments to make at this point in time. Does the Staff have any comments?

MR. GAGLIARDO: Well, I would like to make one specific comment and then one general comment.

I'm Jim Gagliardo. In the area, John, as you address the area "corrective action," I'd like to see you, and maybe it's buried in there, but it didn't come out, see you address two things:

One, a corrective action system has got to have some effective method of preventing recurrence of the problem, and I don't see that in your outline.

You talk about the reporting of the thing. You talk about correcting hardware concerns, but program problems, maybe the program implementation problems you talk about is that.

That is something that needs to be heavily stressed in a corrective action program to

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the craft or whoever out there is causing the problem, in its being identified on an NCR or some other mechanism, there's got to be a mechanism to get it back to people who are out causing the problem to make sure that they don't do the same thing again in the next room that they are working in or whatever.

In that light, this utility uses other documents besides NCR's to identify problems that are picked up in the inspection process, like inspection reports and DCA's, and I think that that needs to be looked at, also, as to how those are handled as far as affecting the corrective actions and, more importantly, preventing recurrences.

MR. HANSEL: Okay.

MR. GAGLIARDO: The other thing that I would like to make is a general comment. Recognize that we as an agency, in order to make the licensing decision that's going to have to be made after all this is done and put to rest, are going to have to consider three basic things:

First of all, is Unit 1, has it been constructed in accordance with the commitments that you have made and the design that has been put forth in conformance with those commitments.

I think that your program points

heavily towards that, looking to see if there are hardware problems, correcting hardware problems that we have identified, correcting hardware problems that you have identified.

The second thing that we have to be able to satisfy ourselves with is the fact that you've still got Unit 2 that you are continuing to construct.

Are the programmatic problems and the management control problems that allowed these things to occur in Unit 1 fixed so that we have some comfort in the fact that the continued construction is going on in Unit 2 and whatever continued construction activities in Unit 1, these problems don't reoccur.

The third thing, and a very important one that I mentioned earlier, but I haven't heard anything come out of this on that is that the same organization that allowed problems to occur here in Unit 1 construction which we have identified is going to be responsible for operating that unit.

We need to, as an agency, have that comfortable feeling that whatever problems are there in the programmatic area, the QA program for the construction of this unit that could spill over into

the operations phase have been corrected.

That's got to be -- Those three things, and I've simplified it, but those are three basic categories of things that we have to be satisfied with and that we will be looking for this action plan to give us comfortable feelings on them.

MR. HANSEL: Let me just make a couple of comments, Jim.

On the preventive action, that's going to be one of our very first considerations from two standpoints: Was the initial corrective action request documented properly, and we'll be looking to see if that thing came back again to any degree of frequency subsequently.

And was the preventive action adequate; did it really fix the thing?

On the Unit 2 and operations phase, that's fully the intent of the SRT for TUGCO as well as the Review Team Leaders.

I mentioned that -- in a lot of my action plans we may have left it out, but we are certainly going to be looking for any implications there that need to be carried across and looked at.

MR. NOONAN: I think last week we basically talked to some of these items, John, on

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the Unit 2 and Unit 1.

Jim's point on the operational aspect is a good one to listen to, because as the NRC focuses their attention now to these issues, it does become -- the final issue is operational. That's where all the focus comes down to.

My management will start looking at that in the near future. So it's best now to -- the experience you gained here and how it can be applied to the operational phase. I think that's important for you to be looking at.

MR. BECK: Your point is very well taken. It's one that we've been considering and you'll hear a lot more about it.

MR. NOONAN: If there are no other Staff comments, I guess I would like the opportunity for CASE, at least representatives of CASE have an opportunity to comment at this point in time.

If you will, identify yourself.

DR. BOLTZ: I am Dr. Boltz representing CASE, and I have a few comments I would like to make today.

The first comment I would like to make about Mr. Hansel's presentation is that I don't see how design is being handled in this entire

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process here in QA and QC. I hope somebody else besides CASE is evaluating design before hardware issues are even seriously evaluated, much less resolved.

I also hope that the TRT and the NRC has a checklist of safety issues formed independently of the utility to ensure that the utility catches them and is not relying on just their own efforts or TERA or somebody else to identify safety issues.

The utility's track record on identifying these issues, in my opinion, is miserable, due to a conflict of interest between QA/QC, who is concerned with safety primarily, hopefully, and upper level management, who are also concerned with cost and prudency of cost, and they always have a weather eye open on keeping costs down.

Specific comment on the Phase II stuff that Mr. Hansel talked about, I believe he mentioned that they have some people working for them that are considered independent inspectors; is that correct?

MR. HANSEL: Yes.

DR. BOLTZ: And I believe, also, that SET are considered --

MR. HANSEL: Yes, Special Evaluation

Team.

DR. BOLTZ: I was wondering if there is a definition or criteria for independence that could be stated somewhere, and how these people fulfill that criteria.

MR. HANSEL: I'll state it right now if you'd like, or we can come back later.

DR. BOLTZ: Oh, sure.

MR. HANSEL: The criteria that we have used is that no prior involvement with TUGCO; no prior involvement with Comanche Peak; no financial interest exceeding more than five percent of their total wealth in terms of TUGCO or TUEC holdings.

DR. BOLTZ: Thank you.

MR. HANSEL: And we have records on every one of them that can be looked at there. Everybody here has never had any prior involvement with TUGCO or Comanche Peak, a very close screening process.

DR. BOLTZ: With regards to the key questions that Mr. Hansel talked about in the QA/QC program, in his overview, he just seemed to mention the January 8th letter and using the SSER only.

It seemed to me that that was a very selective list and that hearing generated issues that were a bit conspicuous by their absence.

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Also, I still have Herb of the Staff -- I'm sorry, I didn't catch your last name -- and he expressed the concern that the QA/QC hardware concerns are a bit limited and they tend to be contained, rather than be expanded. And I noticed in Mr. Hansel's presentation, a number of times he said, "I only intend to go as far as I have to."

I don't want to make that sound ominous or take it out of context, but I do have a concern about what the limiting factors are about containing a problem rather than expanding it.

This same comment, also, would carry throughout the action plans.

I also would like to mention that in this plan here that there are many unspoken assumptions, and the one elicited today by questions from the Staff that the logical path generated by these assumptions is disturbingly a series of non sequiturs, and I would encourage the TRT Staff Team to look at what assumptions were made and ferret out more hidden assumptions, and especially I would encourage them to evaluate the logic that's generated in using these assumptions in the action plan itself and to make sure that most of the non sequiturs are weeded out.

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With regards to material traceability, I was concerned that a vendor review of Chicago Bridge & Iron and AFCO was not mentioned in one of the nodes.

With regards to the deficiency reporting system, I notice that it seemed to me to assume no harassment and intimidation. In fact, I would think that this should appear somewhere in the implementation node where he has "Implementation, yes, no, adequate."

If not TERA, at least the TRT needs to consider the impact of harassment and intimidation on implementation of the QA/QC Program.

With regards to reporting to management, once again harassment and intimidation was not considered.

I might make the general comment that it seems to me that if harassment and intimidation exists at the plant in any degree, that this would short out the whole process of QA/QC.

Again, in the attitude of management, I'd like to find out what's in the implementation mode. I would think that the TRT would need to find out in detail and in writing from TERA on what is in there.

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Mr. Hansel also a number of times expressed the concern or made the comment that his first concern was is the hardware correct and that the hardware was somehow the proof of the QA/QC pudding.

This hardware that Mr. Hansel is talking about seems to be an unrepresentative sample that is accessible, it's selective and it seems to be approached in a non-integrated piecemeal inspection evaluation type of approach.

Good hardware demonstrates good QA/QC is a definite non sequitur at Comanche Peak. For example, we have five unknowns that we are considering in the QA/QC inspection process.

We are not sure the documentation is valid. It's been questioned. We are not sure that the construction procedures and processes were valie or have been followed.

Words of concern about the actual components, were lock nuts in place and other little hardware items.

There's a question as to whether the design is valid. There's an open question as to whether the training is valid, and there's a real question about what are you going to do about in-process

inspections that are challenged. Once an in-process inspection is of dubious quality, you really have no way of going back and checking. I mean, your final point on the integrity of that process is your QA/QC inspector.

So we have five unknowns and it seems to me that four are assumed to be known to examine and prove the inadequacy of the one unknown.

The QA/QC problem is how do we solve the equation with five unknowns and no known variable. So far, it seems to me this plan is inadequate to that task. I would hope that TRT will evaluate the QA/QC problem from much more of an integrated approach and keep these variables in mind when they make their own evaluation.

In regards to audits, current audits tell us nothing about the prior audit problems or the prior condition of the plant.

A 1983 CAT Report comes to mind, and there also were some recent notice of violations regarding audits at Comanche Peak.

It seems to me that these current statuses tell us nothing about problems due to former employees and their attitudes and upper level management.

Quite frankly, if the audits now show that things are presently and currently okay at Comanche Peak, what does this tell us about Unit 1, which is virtually complete? It tells us nothing about its history.

In fact, it tells us nothing about 65 percent of Unit 2.

It also lacks relevance to the quality assurance/quality control issues raised in the Atomic Safety and Licensing Board hearings.

This emphasis on the current, it seems to me, sounds like an end run around the Atomic Safety and Licensing Board. It also sounds very much like a study designed to establish economic prudency at a certain point in time for hearings in another forum.

With regards to the pipe supports, I would like to make a comment on sampling in general. Texas Utilities has had and continues to have problems with using any known sampling methodology, and this would also include all firms that are employed by them.

They have a very hard time using any known sampling methodology which would result in a representative sample, and it seems to me that that's

what the NRC and the TRT really needs.

If the TRT draws conclusions from TERA's samples, it must first demonstrate to itself, and then, I think, to the Board and to the public in general, that the sampling of the part is representative and has predictive power for the conclusion regarding the whole; namely, that the whole is acceptable.

Otherwise, we just have another non sequitur.

As a general reaction to this plan presented today, I see safety issues falling through the cracks of this plan. I see design issues falling through. I see implementation problems. I see documentation problems. I see harassment problems. I see hardware problems. I see training problems, all falling through the cracks.

I also have a question about accessibility, and first of all, a definition of accessibility and what it is.

This accessibility sets, it seems to me, limits to what everybody is looking at. It seems to me the attitude is, "We are not going to look at the generic implications if we can help it."

I have a question as to if the

plant is almost 100 percent done, that means that many things that you would want to look at that I would think are safety related are going to be inaccessible, either under concrete, or perhaps you would have to climb over supports or something to see them.

That's a real problem. It seems to me that we can't make the assumption that because it is inaccessible, it must be okay, especially when you have paperwork problems and inspection problems with regards to training and procedures.

And this says nothing of harassment and intimidation.

I don't know how that problem should be resolved, but I don't feel it should be ignored by just saying that because it's inaccessible that we don't have to look at it.

I guess that inaccessibility problem, perhaps, really leads into a problem that was touched on today which is a bit of an economic problem, and that is when do you take off insulation and when do you leave insulation on.

It seems to me that that's -- I understand the concern that everybody has. You don't want to do unnecessary removals of insulation and perhaps run the risk of rebuilding it, because I can

see how that causes undue costs and a burden on the utility. I understand that, but that also raises a concept that I think needs to be addressed by the utility, the Intervenor and the NRC, and I think together, and that's how do we resolve the problem of a safety versus an economic problem at a nuclear power plant.

I would hope that all three of us could work together and clarify this distinction.

I would furthermore hope that the end result would not mean that unsafe or dubious components or processes would be declared acceptable because it would be too costly to repair, replace or re-analyze.

A copious use of butt-splices comes to my mind as perhaps what might be a good indication of this type of problem. It's my understanding that they are not to be done, but the utility had a limited exemption and now they have exceeded that exemption, and what do we do.

I understand it's really this type of a problem, because it impacts safety; otherwise, butt-splices would not be allowed, but also it impacts economics, because a butt-splice that's correctly done, as I understand it, is acceptable, and

I would think it must be so; otherwise, the NRC wouldn't have had this limited exemption for the utility. At least I hope that my hidden assumption there is correct.

I understand that this is a bit difficult for the NRC, because the NRC is not in the business of performing cost/benefit analysis for the utilities. In fact, one could even say why would the NRC even want to consider the problem from an economic perspective, but I think the people here have demonstrated sympathy with the utilities, and I can certainly understand the utility's cost concerns, especially with the Texas Prudency Law.

But on the other hand, I think I have a valid point in saying that the economic issue, per se, is best handled at another forum, not this one. In fact, it might be best for the NRC to delete the economic implication factor and just concentrate on protecting the public safety.

But I just wanted to raise that problem because I wanted everyone to realize that CASE is aware it exists, and I think it needs to be dealt with above the board and not, perhaps, negotiated where the NRC just lets the utility keep insulation on carte blanche or not take it off. I

would like to see it handled more openly.

Some other things I did not see addressed were prompt identification and correction of problems and what that means for the plant.

It seems to me that the studies show that we are still identifying problems. I had hoped that we would be long through with that, and we would be starting to solving them; but I'm not even sure whether the Applicant admits that real problems exist.

I didn't see the issue of how these problems started being dealt with; and I didn't see the issue of what happens when problems were called to the attention of superiors. That sort of overlaps with the harassment and intimidation.

Of these consultant groups mentioned today, CASE shares some of the Staff's confusion with how all of these people work together. I thank Mr. Hansel for clearing up independence a bit for us today, but who they are and what exactly they do, CASE needs help, as the Staff does, with how all these people interface with one another and what they do, resumes of various people and so forth and so on.

CASE also -- I have touched on this already, but CASE does not agree with the narrowing

of the scope. I'm thinking of the electrical work which has admittedly been reinspected several times.

It should follow that the hardware discrepancies associated with that should have already been found and corrected, and it seems to be a bit of a non sequitur to take this electrical hardware as the basis for decision of whether or not to do a historical review of other disciplines.

May I have just a quick second?

(Pause in proceedings.)

DR. BOLTZ: Okay. Thank you very much.

MR. LIVERMORE: I have one comment. You mentioned something about the TRT stating it demonstrated sympathy towards the licensee in regards to cost and I'd like to rebut that.

I don't agree with that at all. I think during the whole time of our QA/QC group TRT effort, not once was cost ever factored into anything. We certainly didn't have any sympathy towards the licensee in that regard at all.

I would like to point that out on the record. Thank you.

MR. NOONAN: Okay. Thank CASE for their comments.

Is there anybody else from the public

who would like to make a comment at this point in time?

MS. GARDE: Mr. Noonan, I'm Billie Garde. I am going to save my comments until after all these meetings are completed, and we have reviewed the program plans.

MR. NOONAN: Thank you, Billie.

Anyone else?

(No response.)

MR. NOONAN: I guess, John, if you are finished, the meeting is adjourned.

MR. BECK: 8:30 tomorrow morning.

(Whereupon, at 12:00 noon, the meeting was concluded.)

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CERTIFICATE OF OFFICIAL REPORTER

This is to certify that the attached proceedings before the UNITED STATES NUCLEAR REGULATORY COMMISSION in the matter of:

NAME OF PROCEEDING: MEETING BETWEEN TEXAS UTILITIES AND THE NUCLEAR REGULATORY COMMISSION REGARDING COMANCHE PEAK STEAM ELECTRIC STATION - QA/QC, APPLICANT'S PROGRAM PLAN

DOCKET NO.:

PLACE: GLEN ROSE, TEXAS

DATE: TUESDAY, MARCH 5, 1985

were held as herein appears, and that this is the original transcript thereof for the file of the United States Nuclear Regulatory Commission.

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