

**Commonwealth Edison**

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 Address Reply to: Post Office Box 767  
 Chicago, Illinois 60690

Dmb

July 8, 1985

Mr. James G. Keppler  
 Regional Administrator  
 U. S. Nuclear Regulatory Commission  
 Region III  
 799 Roosevelt Road  
 Glen Ellyn, IL 60137

*Aug+1*

PRIORITY ROUTING	
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SUBJECT: Material Traceability Verification  
 (MTV) Program Presentation  
 Braidwood Station Units 1 and 2  
NRC Docket Nos. 50-456/457

Dear Mr. Keppler:

On June 25, 1985 a presentation was made of the Braidwood Material Traceability Verification (MTV) Program. The purpose of this letter is to provide a summary of that presentation.

An Interim Report updating 10 CFR 50.55(e) No. 83-07 will be issued within a few weeks. It was delayed pending results of this meeting. The progress and findings of the MTV Program will be specified at that time.

Please address any questions that you or your staff may have concerning this matter to this office.

Very truly yours,

*L. O. DelGeorge*

L. O. DelGeorge  
 Assistant Vice-President

LOD/dak

cc: NRC Resident Inspector - Braidwood

Director of Inspection and Enforcement  
 U. S. Nuclear Regulatory Commission  
 Washington, D.C. 20555

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## ATTACHMENT 1

### SUMMARY OF COMMENTS MADE BY COMMONWEALTH EDISON COMPANY PERSONNEL

July 11, 1985

#### INTRODUCTION

- In the summer of 1983, NRC personnel had a concern about traceability of piping materials. Simply stated, their concern was whether, for a particular field location, the specified or correct material was checked out of the Warehouse and installed, and whether our documentation of the material used is correct.

#### COMMONWEALTH EDISON COMPANY RESPONSE

- To address the NRC concern and confirm our confidence in a system which the Phillips, Getschow Company had used for many years in doing ASME work, we implemented a sampling review of the material traceability system. That review included a field walkdown of piping for identity of pipe markings, and a comparison of those markings to office documentation supporting material traceability. In February of 1984 we called in a team of ASME Code experts to review the Phillips, Getschow Company material traceability system, its implementation, and the results of the sampling effort. That team consisted of the following individuals:

- Ed Hemzy    --    Commonwealth Edison Company
- Ernie Branch    --    Sargent and Lundy
- Howard Dubell    --    Hartford Steam Boiler

It was the opinion of the ASME Code knowledgeable persons that the Phillips, Getschow system, as established, was adequate, and, as implemented was adequate to meet ASME Code Material Traceability requirements.

- Commonwealth Edison Company personnel and the team of Code experts, presented those conclusions to NRC personnel in February of 1984. Despite the conclusions presented, NRC personnel requested additional assurance that the material traceability system had been adequately implemented.

MATERIAL TRACEABILITY VERIFICATION (MTV) PROGRAM

- In responding to the NRC's concern on this issue, Commonwealth Edison Company implemented the Material Traceability Verification Program, a 100% review of system implementation.

ACTIONS SUBSEQUENT TO MTV PROGRAM IMPLEMENTATION

- In addition to Ed Hemzy, Edison's Code knowledgeable person, the Project retained the services of another ASME Code knowledgeable person -- Mr. Bill Gibbons. Mr. Gibbons' expertise is in the materials area and materials application to ASME Code.
- The ASME National Board was invited to Braidwood by Edison, in response to discussions with the NRC. They have been at Braidwood since February 18, 1985. The National Board has been involved in the disposition of all non-conformances (NCR's) since about June 1, 1985, and is auditing NCR's dispositioned prior to their involvement. They are also auditing material traceability implementation after the 1983 cutoff dates.
- Based on discussions with us, it is our understanding that they believe:
  1. That the Phillips, Getschow System, as implemented, provided adequate traceability of material and that the Stores Request System complies with the ASME Code.
  2. That in dispositioning NCR's, Edison is taking a conservative approach and meeting ASME Code requirements.
  3. That, given our approach to resolving MTV related issues, Edison will end up with a piping installation in full compliance with the ASME Code.
  4. That the Code recognizes the occurrence of non-conformances as common, and therefore provides for non-conformance disposition and corrective action efforts, with involvement by the authorized inspection agency, as standard methods for assuring adequate resolution of the problems and compliance with the ASME Code.

- Commonwealth Edison Company, by its own initiative, requested an opportunity to discuss the MTV Program and its results with the ASME Local jurisdiction -- the Division of Boiler and Pressure Vessel Safety of the Illinois State Fire Marshal's Office. A meeting was arranged in Springfield on May 31, 1985 with representation also from the Illinois Department of Nuclear Safety. Subsequently, an additional meeting was held on June 17, 1985, at Braidwood. At the second meeting the results of the MTV Program were discussed in more detail, and the State of Illinois agencies had an opportunity again to discuss our efforts with the authorized inspection agency and the ASME National Board personnel.

Following the above meetings, Edison was informed that the personnel from the Illinois State Fire Marshal's Office were satisfied that our Program will result in assuring the piping systems at Braidwood site will be in compliance with the ASME Code. Further, they indicated that all decisions and acceptances of Edison's Program will be based on the advice and counsel of the ASME National Board personnel presently on the Braidwood site.



ATTACHMENT 2

COMMONWEALTH EDISON COMPANY

BRAIDWOOD STATION

MATERIAL TRACEABILITY VERIFICATION (MTV) PROGRAM

JUNE 25, 1985

NRC REGION III

GLEN ELLYN, ILLINOIS

# MATERIAL TRACEABILITY VERIFICATION (MTV) PROGRAM

## AGENDA

- |      |   |   |
|------|---|---|
| I.   | INTRODUCTION  | MIKE WALLACE<br>PROJECT MANAGER                       |
| II.  | PIPING MATERIAL TRACEABILITY<br>SYSTEM -- AND, MATERIAL<br>TRACEABILITY VERIFICATION<br>(MTV) PROGRAM | DAN SHAMBLIN<br>CONSTRUCTION SUPT.                    |
| III. | RESULTS AND SUMMARY OF<br>MTV PROGRAM   | DAN SKOZA<br>MECHANICAL FIELD ENG.                    |
| IV.  | MTV PROGRAM FROM ASME<br>CODE PERSPECTIVE   | ED HEMZY<br>ASME B & PV COMMITTEE                     |
| V.   | MTV PROGRAM OVERSIGHT   | TOM QUAKA<br>SITE QUALITY ASSURANCE<br>SUPERINTENDENT |
| VI.  | SUMMARY   | MIKE WALLACE<br>PROJECT MANAGER                       |

BIOGRAPHICAL

DATA OF

PRESENTERS

## BIOGRAPHICAL DATA

Michael J. Wallace  
Assistant Manager of Projects (3 Years)  
Project Manager --- Braidwood Nuclear Power Station (2 Years)

### Education

B.S. Electrical Engineering	Marquette University
MBA (Specialization: Finance)	University of Chicago
Nuclear Power School	United States Navy

### Experience

Navy Nuclear Program (Qualified Engineer Officer)	5 years	U.S. Navy
Quality Assurance Engineer	3 years	Clinch River Breeder Reactor Project
Field Cost Engineer	1 year	LaSalle, Byron, and Braidwood
Project Coordinator	1 year	Byron Project
Asst. Station Superintendent	1 year	State Line Station
Station Superintendent	1 year	Waukegan Station

Registered Professional Engineer - Illinois  
Member, American Nuclear Society  
Member, Industry Review Group for Construction Project Evaluation  
Division, Institute of Nuclear Power Operations (INPO)

## BIOGRAPHICAL DATA

Edwin J. Hemzy  
Construction Manager (3 1/2 Years)  
Station Construction Department

### Education

B.S.M.E. Mechanical Engineering	Illinois Institute of Technology
MBA	University of Chicago

### Experience

Industrial/Utility Experience (Welding/Materials Engineering/ Manufacturing/Quality Assurance)	39 years	
Station Construction Department Quality Assurance Engineering Staff	16 years	Commonwealth Edison Company

For the past 12 years I have been deeply involved with ASME Boiler and Pressure Vessel Committee Activities including:

- Sub-Committee on Nuclear Accreditation
- Sub-Committee on Nuclear Power
- Main Committee
- Board of Nuclear Codes and Standards
- Board of Accreditation

## BIOGRAPHICAL DATA

Daniel L. Shamblin  
Project Construction Superintendent  
Braidwood Nuclear Power Station (1 Year)

### Education

B.S. Civil Engineering  
MBA

Michigan Technological University  
University of Chicago

### Experience

Construction Engineer	6 years	Zion and LaSalle
Project Coordinator	2 years	LaSalle Project
Assistant to Project Manager	2 years	LaSalle Project
Construction Superintendent	1 year	LaSalle Project
Field Engineering Manager	1 year	Braidwood Project

Registered Professional Engineer - Illinois



## BIOGRAPHICAL DATA

Daniel J. Skoza  
Special Projects Supervisor  
Project Field Engineering  
Braidwood Nuclear Power Station (1 Year)

### Education

B.S. Astronomy	University of Illinois
M.S. Physics	Louisiana State University
M.S. Nuclear Engineering	Iowa State University

### Experience

Quality Assurance Engineer	3 1/2 years	LaSalle Project
Construction Engineer	3 years	LaSalle Project
Tech Staff Engineer	3 months	LaSalle Project

## BIOGRAPHICAL DATA

Thomas E. Quaka  
Quality Assurance Superintendent  
Braidwood Nuclear Power Station (1 Year)

### Education

B.S. Mechanical Engineering  
MBA

University of Illinois  
University of Chicago

### Experience

Mechanical Engineer Dresden  
& Quad Cities Project Group

6 years

Station Nuclear  
Engineering Dept.

Quality Assurance Supervisor

2.5 years

LaSalle

Quality Assurance Superintendent

4.5 years

LaSalle/Braidwood

### PROFESSIONAL AFFILIATIONS

Member of ASME Radwaste Committee - 9 years (1975-1983)

Chairman of Operations Sub-Committee - 5 years (1977-1983)  
of the Radwaste Committee

Member Alternate - Sub-Committee - 2.5 years (1983 to present)  
on Nuclear Accreditation

**SUMMARY:**

Mr. Gibbons has worked in manufacturing and the power industry since 1951. His domestic and overseas experience includes foundry engineering, materials engineering of power plant components and fuel, process development, supplier and contractor evaluation and development, quality systems, quality assurance, inspection and site erection and construction. Mr. Gibbons is a recognized expert in quality for Regulatory and ASME Boiler and Pressure Vessel Code Applications.

He has been involved in engineering review, licensing programs, and training. Since 1970, Mr. Gibbons has been an active participant as a member and chairman of Codes and Standards Committees in the development of requirements for power plant components. He has served utilities, architect/engineers, and manufacturers as a consultant on design, construction, and quality systems.

**EDUCATION:**

M.B.A., University of California, Berkeley 1958

B.S., Metallurgical Engineering, University of California, Berkeley, 1952

**PROFESSIONAL BACKGROUND:**

American Society of Mechanical Engineers

- o Member, Subgroup on General Requirements (SC III)
- o Co-Chairman, Working Group on Quality Assurance and Stamping (SC III)
- o Member, Subcommittee on Nuclear Accreditation
- o Task Group on Material Manufacturers and Suppliers (SC III)
- o ASME-COURSE DIRECTOR, Quality Assurance

ANSI/ASME NQA

- O Committee on Nuclear Quality Assurance

AMERICAN SOCIETY FOR QUALITY CONTROL

Past Member

- o ANSI B31.1, Power Piping
- o ANSI B31.7, Nuclear Power Piping
- o ASME Subgroup on Materials (SC III)
- o ASME Subgroup on Fabrication and Examination (SC III)
- o ASTM Materials Committees

**PROFESSIONAL REGISTRATION:**

Metallurgical Engineer (State of California)  
Quality Engineer (State of California)  
  
Qualified Lead Auditor, ANSI-N-45.2.23

**EXPERIENCE:**

1981-present	<b>GIBBONS &amp; ASSOCIATES</b> Los Gatos, California President  Currently Consulting with utilities, manufacturers and architect-engineers
1980-1981	<b>NUCLEAR TECHNOLOGY, INCORPORATED</b> San Jose, California Chief Consultant, Quality
1969-1980	<b>BECHTEL POWER CORPORATION</b> San Francisco, California Successively Supervising Metallurgical Engineer, Quality Assurance Manager, and Procurement/Supplier Quality Deputy Manager
1959-1969	<b>GENERAL ELECTRIC COMPANY</b> San Jose, California Successively Engineer, Manager, Quality Assurance Europe
1958-1959	<b>SYLVAFIA (GTE)</b> Mountain View, California Contracts Administration Analyst
1956-1958	<b>RIDGE FOUNDRY COMPANY</b> San Leandro, California Metallurgist
1954-1956	<b>U.S. ARMY</b> Fort Sill, Oklahoma Instructor
1952-1954	<b>WESTINGHOUSE ELECTRIC CORPORATION</b> Pittsburgh, Pennsylvania Manufacturing Engineer

SECTION 1  
INTRODUCTION

PRESENTED BY

M. J. WALLACE

## MATERIAL TRACEABILITY VERIFICATION (MTV) PROGRAM

### OVERVIEW

#### NRC CONCERN

- ° ADEQUACY OF CONTROLS FOR ASSURING THE INSTALLATION OF CORRECT ASME CODE PIPING MATERIALS.

#### COMMONWEALTH EDISON COMPANY RESPONSE

- ° SAMPLING REVIEW OF SYSTEM IMPLEMENTATION (AUGUST, 1983 -- FEBRUARY, 1984)
- ° REVIEW OF SYSTEM FOR PROVIDING MATERIAL TRACEABILITY BY ASME CODE EXPERTS (FEBRUARY, 1984).
- ° 100% REVIEW OF SYSTEM IMPLEMENTATION THROUGH MATERIAL TRACEABILITY VERIFICATION (MTV) PROGRAM (JUNE, 1985)



## MATERIAL TRACEABILITY VERIFICATION (MTV) PROGRAM

### MTV PROGRAM

- ° A UNIQUE, 30 MANYEAR, 100% PIPING WALKDOWN EFFORT
- ° VERIFIED MATERIAL TRACEABILITY THROUGH COMPARISON OF DOCUMENTATION WITH FIELD MARKINGS ON PIPE

### OVERALL OBJECTIVE

- ° ASSURE THAT BRAIDWOOD PIPING INSTALLATION IS FULLY IN COMPLIANCE WITH THE ASME CODE

## MATERIAL TRACEABILITY VERIFICATION (MTV) PROGRAM

### SUMMARY OF CONCLUSIONS

- ° THE MATERIAL TRACEABILITY SYSTEM (PROCEDURES AND PRACTICES), ESTABLISHED BY PHILLIPS, GETSCHOW COMPANY, MET ASME CODE REQUIREMENTS.
- ° THE MTV PROGRAM CONFIRMS THAT THE SYSTEM ASSURED:
  - ADEQUATE TRACEABILITY OF MATERIALS
  - ADEQUATE INSTALLATION OF CORRECT MATERIAL
- ° ASME CODE COMPLIANCE IS BEING ACHIEVED

SECTION II

PIPING MATERIAL  
TRACEABILITY SYSTEM

AND

MATERIAL TRACEABILITY  
(MTV) PROGRAM

PRESENTED BY

D. L. SHAMBLIN

# MATERIAL TRACEABILITY VERIFICATION (MTV) PROGRAM

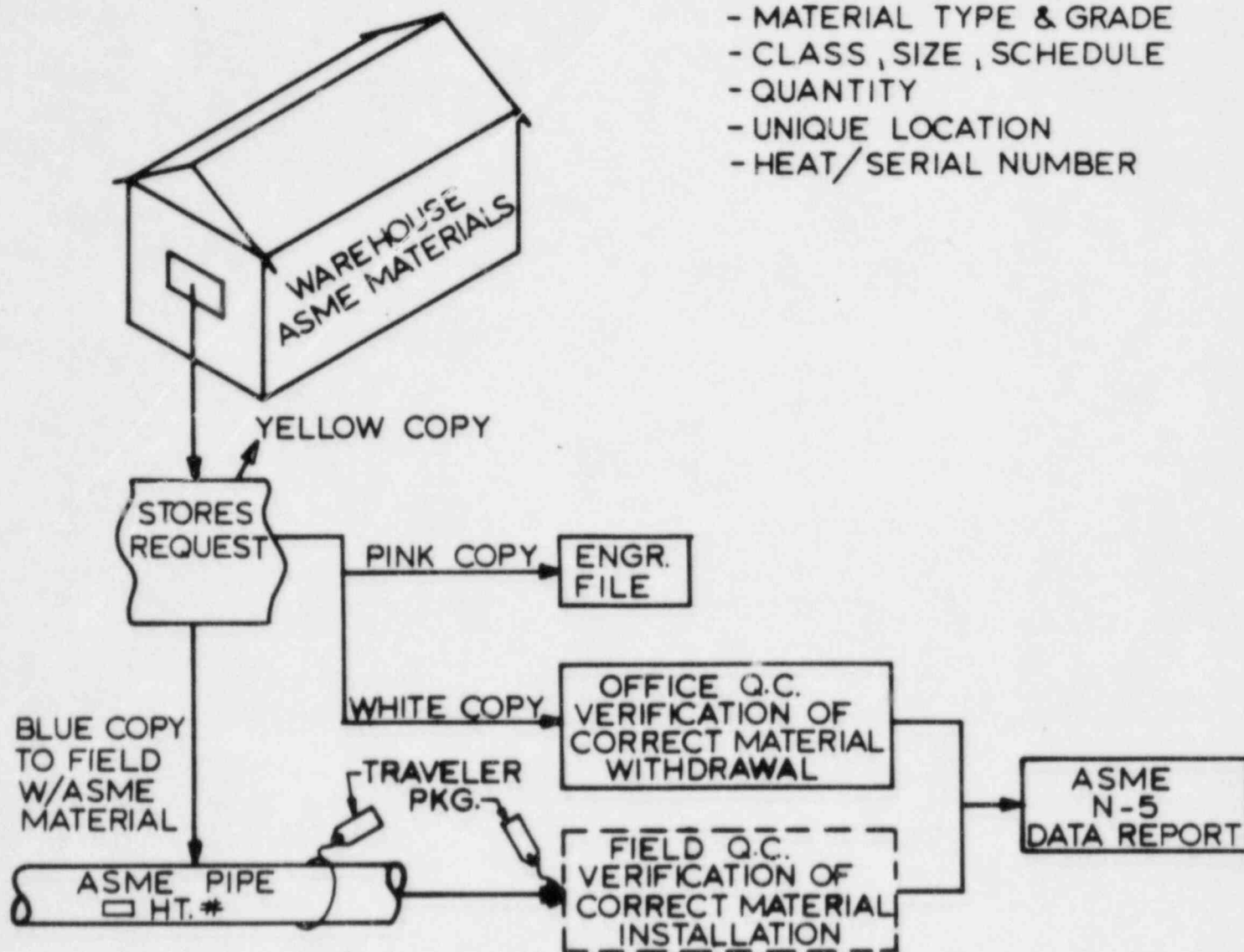
## TOPICS

- ° PHILLIPS, GETSCHOW COMPANY MATERIAL TRACEABILITY SYSTEM
- ° NRC CONCERNS AND ISSUES -- JULY, 1983
- ° COMMONWEALTH EDISON COMPANY RESPONSES
- ° MTV PROGRAM PURPOSE AND DESCRIPTION
- ° MTV PROGRAM IMPLEMENTATION

# MATERIAL STORES REQUEST SYSTEM

STORES REQUEST DENOTES:

- MATERIAL TYPE & GRADE
- CLASS, SIZE, SCHEDULE
- QUANTITY
- UNIQUE LOCATION
- HEAT/SERIAL NUMBER



MATERIAL TRACEABILITY VERIFICATION (MTV) PROGRAM

NRC CONCERNS AND ISSUES -- JULY, 1983

- ° A DOCUMENTED QUALITY CONTROL MATERIAL VERIFICATION AT THE POINT OF INSTALLATION SHOULD BE PERFORMED
  
- ° WITHOUT THE DOCUMENTED QUALITY CONTROL MATERIAL VERIFICATION, THE VALIDITY OF THE STORES REQUEST DOCUMENTATION AS AN ACCEPTABLE METHOD FOR MAINTENANCE OF HEAT NUMBER TRACEABILITY WAS QUESTIONABLE



## MATERIAL TRACEABILITY VERIFICATION (MTV) PROGRAM

### COMMONWEALTH EDISON COMPANY RESPONSE

- ° PHILLIPS, GETSCHOW COMPANY WAS DIRECTED TO IMPLEMENT PROCEDURAL CHANGES REQUIRING QUALITY CONTROL INSPECTORS TO BETTER DOCUMENT THEIR MATERIAL VERIFICATION INSPECTIONS DURING INSTALLATION ACTIVITIES (I.E. AT THE POINT OF INSTALLATION)
- ° PHILLIPS, GETSCHOW COMPANY WAS DIRECTED TO UNDERTAKE A SAMPLE BASED MATERIAL TRACEABILITY VERIFICATION PROGRAM TO ESTABLISH CONFIDENCE IN PAST INSTALLATIONS

### SAMPLE PROGRAM RESULTS

- MATERIAL TRACEABILITY WAS VERIFIED FOR AN EXCEPTIONALLY HIGH PERCENTAGE OF PIPING MATERIAL BY MATERIAL MARKING AND/OR STORES REQUEST DOCUMENTATION
- STORES REQUEST DOCUMENTATION WAS VALIDATED THROUGH EXCEPTIONALLY HIGH CORRELATION WITH MATERIAL MARKINGS
- ° ASME CODE COMMITTEE MEMBERS REVIEW OF THE MATERIAL TRACEABILITY SYSTEM CONFIRMED THAT ASME CODE REQUIREMENTS WERE MET.
- ° NRC REQUESTED ADDITIONAL ASSURANCE -- 100% REVIEW OF INSTALLED ASME PIPING AND ATTACHMENTS

## MATERIAL TRACEABILITY VERIFICATION (MTV) PROGRAM

### MTV PROGRAM PURPOSE AND DESCRIPTION

#### ° PURPOSE

- PROVIDE ADDED ASSURANCE THAT CORRECT PIPING MATERIALS WERE INSTALLED
- CONFIRM THE VALIDITY OF THE STORES REQUEST DOCUMENTATION

#### ° SCOPE

- 100% ASME LARGE BORE PIPING AND ATTACHMENTS INSTALLED PRIOR TO JANUARY 1, 1983
- 100% ASME SMALL BORE PIPING AND ATTACHMENTS INSTALLED PRIOR TO SEPTEMBER 6, 1983

#### ° DESCRIPTION

- SPECIAL PROCEDURES CONTROLLED PROGRAM
- ENGINEERING PREPARATION OF VERIFICATION PACKAGES
- INVOLVES FIELD AND OFFICE QUALITY CONTROL VERIFICATIONS
- COMPUTER ENTRY OF DATA FOR SORTING

SECTION III

RESULTS AND SUMMARY  
OF THE  
MTV PROGRAM

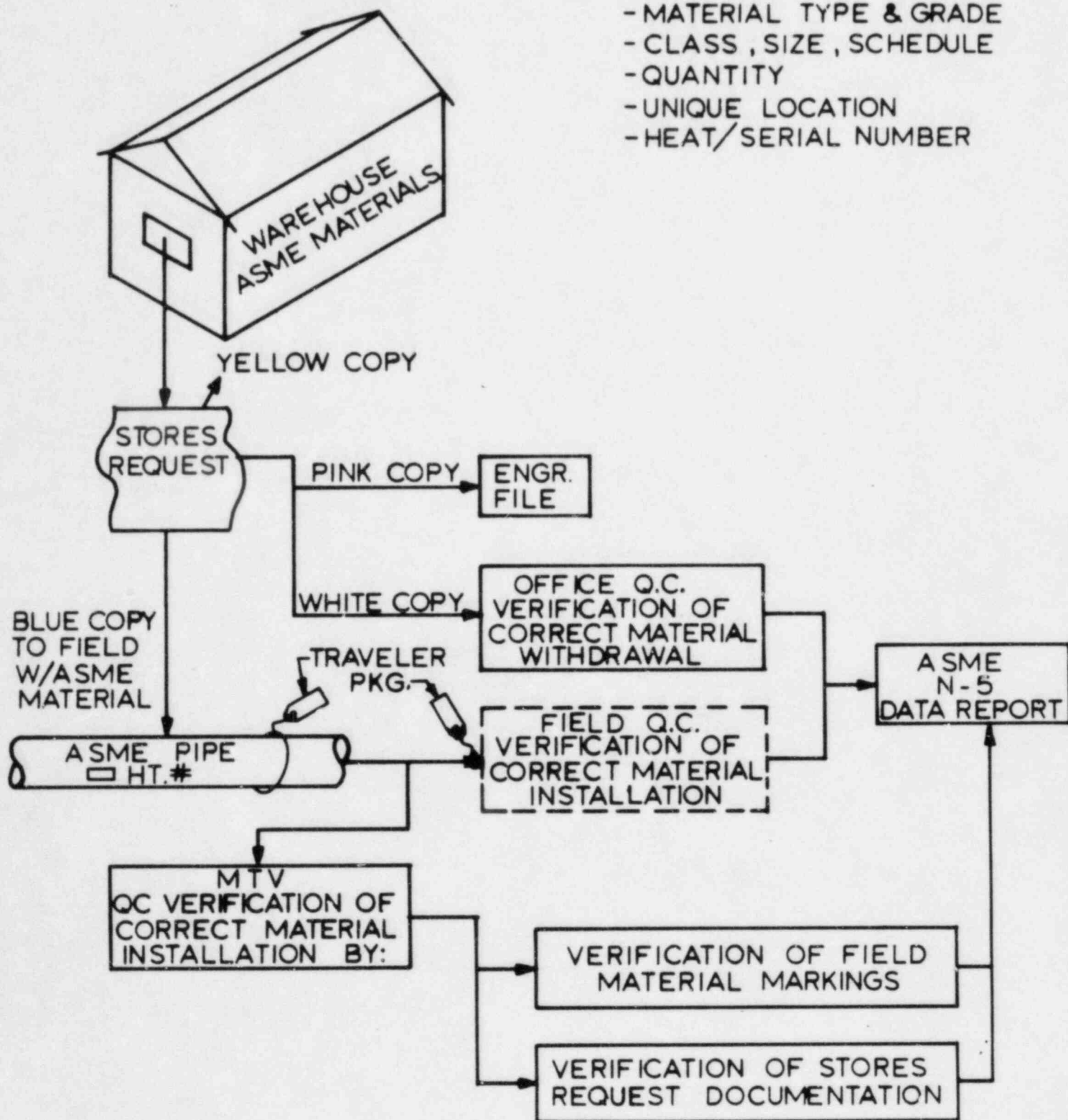
PRESENTED BY

D. J. SKOZA

# MATERIAL STORES REQUEST SYSTEM

STORES REQUEST DENOTES:

- MATERIAL TYPE & GRADE
- CLASS, SIZE, SCHEDULE
- QUANTITY
- UNIQUE LOCATION
- HEAT/SERIAL NUMBER



## MATERIAL TRACEABILITY VERIFICATION (MTV) PROGRAM

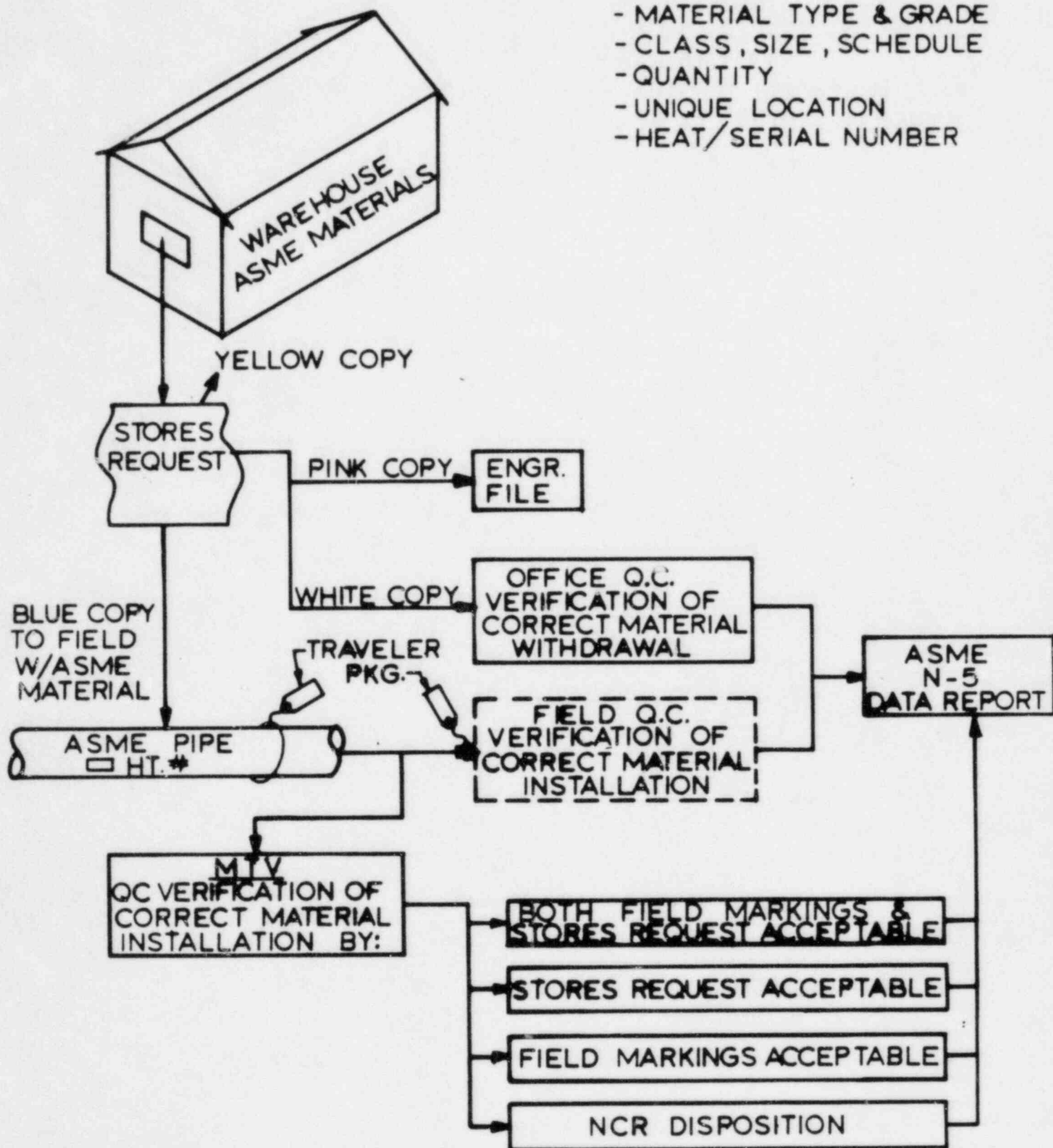
### MTV PROGRAM IMPLEMENTATION

- ° 57 PHILLIPS, GETSCHOW COMPANY QUALITY CONTROL PERSONNEL RECEIVED SPECIALIZED TRAINING AND CERTIFICATION IN MATERIAL INSPECTIONS AND EVALUATIONS
- ° 44 PHILLIPS, GETSCHOW COMPANY QUALITY CONTROL FIELD PERSONNEL PERFORMED A 100% INSPECTION OF APPROXIMATELY 25,000 INSTALLED (ACCESSIBLE) CODE ITEMS IN A PERIOD OF 14 MONTHS
- ° 13 PHILLIPS, GETSCHOW COMPANY QUALITY CONTROL OFFICE PERSONNEL REVIEWED OVER 60,000 QUALITY CONTROL DOCUMENTS
- ° TO DATE APPROXIMATELY 61,000 MANHOURS HAVE BEEN EXPENDED BY PHILLIPS, GETSCHOW COMPANY TO IMPLEMENT THIS PROGRAM. (43,000 FIELD; 18,000 OFFICE)
- ° NUMEROUS AUDITS AND SURVEILLANCES COMPLETED BY INDEPENDENT PARTIES DURING PROGRAM IMPLEMENTATION

# MATERIAL STORES REQUEST SYSTEM

STORES REQUEST DENOTES:

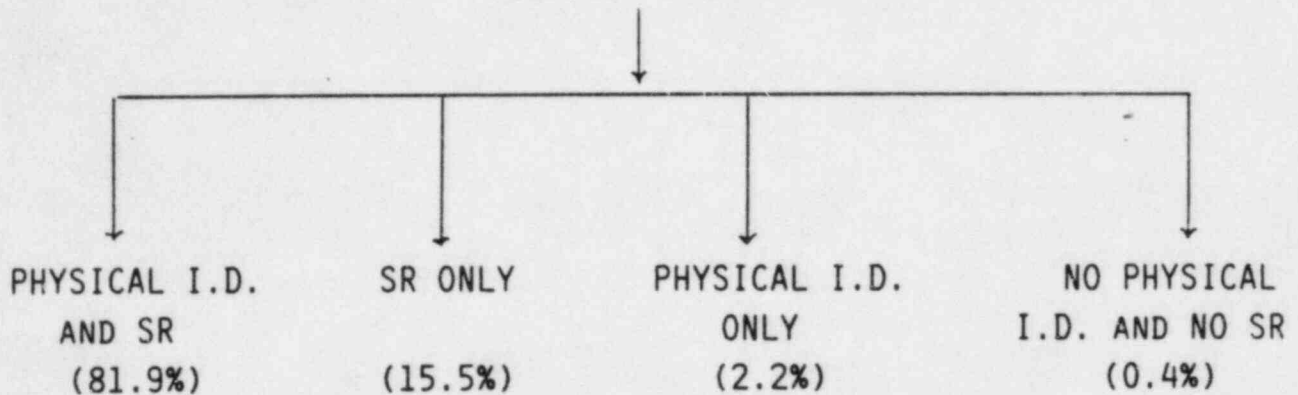
- MATERIAL TYPE & GRADE
- CLASS, SIZE, SCHEDULE
- QUANTITY
- UNIQUE LOCATION
- HEAT/SERIAL NUMBER





## MATERIAL TRACEABILITY VERIFICATION (MTV)

ITEMS VERIFIED BY PHYSICAL INSPECTION AND/OR  
REVIEW OF STORES REQUEST (SR) DOCUMENTATION  
(25,853 ITEMS)



PHYSICAL I.D. AND SR PRESENT  
(21,164 ITEMS)

99% -- THE SR AND PHYSICAL I.D. AGREE ESTABLISHING  
POSITIVE TRACEABILITY.

1% -- THE SR AND PHYSICAL I.D. DO NOT AGREE. FURTHERMORE,  
(218 ITEMS) DISPOSITION OF THE NONCONFORMANCES INDICATES 165  
ITEMS MEET ASME CODE REQUIREMENTS.

- THE CORRELATION OF 99% BETWEEN THE SR AND PHYSICAL I.D. IS  
EXCEPTIONALLY HIGH.
- THIS CONFIRMS THE ACCEPTABILITY OF THE PGCO MATERIAL  
TRACEABILITY SYSTEM.

SR ONLY  
(AS REQUIRED BY THE PHILLIPS, GETSCHOW COMPANY PROGRAM)  
(4,006 ITEMS)

3980 -- TRACEABLE ASME CODE ITEMS

3374 -- THE ITEM HAS AN ACCEPTABLE SR WITH A  
TRACEABLE NUMBER, ALTHOUGH THE ASME CODE  
DOES NOT REQUIRE HEAT TRACEABILITY.

606 -- THE ITEM HAS AN ACCEPTABLE SR WITH A  
TRACEABLE NUMBER, WHEN THE ASME CODE  
REQUIRES HEAT TRACEABILITY.

26 -- ITEMS DISPOSITIONED FOR REPLACEMENT BECAUSE  
TRACEABILITY CANNOT BE ESTABLISHED.

PHYSICAL I.D. ONLY  
(579 ITEMS)

557 -- TRACEABLE ASME CODE ITEMS

273 -- MANUFACTURER'S MILL MARKING EXISTS  
ESTABLISHING TRACEABILITY

161 -- THE PHYSICAL I.D. INDICATES A TRACEABLE  
NUMBER ALTHOUGH THE ASME CODE DOES NOT  
REQUIRE HEAT TRACEABILITY

123 -- THE PHYSICAL I.D. INDICATES A TRACEABLE  
NUMBER WHEN THE ASME CODE REQUIRES HEAT  
TRACEABILITY

22 -- ITEMS DISPOSITIONED FOR REPLACEMENT BECAUSE  
TRACEABILITY CANNOT BE ESTABLISHED.

MORE THAN 99% OF THE TIME, THE PHYSICAL I.D. NUMBERS TRANSFERRED  
BY PGCO HAVE BEEN DETERMINED TO BE CORRECT.

NO PHYSICAL I.D. OR SR  
(104 ITEMS)

73 -- TRACEABLE ASME CODE ITEMS

64 -- ITEMS DISPOSITIONED AS ACCEPTABLE  
(THE ASME CODE DOES NOT REQUIRE HEAT  
TRACEABILITY)

9 -- ITEMS DISPOSITIONED AS ACCEPTABLE  
(THE ASME CODE REQUIRED HEAT  
TRACEABILITY)

31 -- ITEMS DISPOSITIONED FOR REPLACEMENT BECAUSE  
TRACEABILITY CANNOT BE ESTABLISHED.

NCR DISPOSITION OF MTV ITEMS TO ASSURE ASME CODE  
TRACEABILITY REQUIREMENTS

- I. ITEMS INITIALLY DETERMINED TO BE NONCONFORMING WERE DISPOSITIONED AS ACCEPTABLE WHEN THE FOLLOWING EXISTS TO PROVIDE HEAT TRACEABILITY:

MILL MARKING

ADDITIONAL ASME CODE ACCEPTABLE PGCO DOCUMENTATION

- II. THE S&L SPECIFICATION AND PGCO PIPING MATERIAL TRACEABILITY PROGRAM REQUIRES HEAT TRACEABILITY TO THE SPECIFIED LOCATION FOR ASME CLASS 1, 2, AND 3 PIPING. IN CASES LISTED BELOW, THIS IS MORE RESTRICTIVE THAN ASME CODE RULES.

THE FOLLOWING ITEMS ARE DISPOSITIONED AS ACCEPTABLE WHEN THE PGCO DOCUMENTATION INDICATES THE S&L SPECIFIED MATERIAL TYPE AND GRADE WAS INSTALLED.

- CLASS 1 AND 2 PIPING AND FITTINGS  $\leq 3/4"$   $\phi$  PER NA-3767.4(B)
- CLASS 2 AND 3 INTEGRAL ATTACHMENTS PER NC/ND-2130 AND 2190
- CLASS 3 CONSTRUCTION PER ND-2150

- III. ITEMS DETERMINED AS NOT MEETING THE ASME CODE REQUIREMENTS ARE REMOVED AND REPLACED.

### MTV SUMMARY

- THE ACCEPTABILITY OF THE PGCO SR SYSTEM HAS BEEN CONFIRMED.
- PHYSICAL IDENTIFICATION OR PGCO DOCUMENTATION EXISTS TO ESTABLISH MATERIAL TRACEABILITY.
- OF THE .5% (132) OF THE 25,853 ITEMS THAT REQUIRE REPLACEMENT DUE TO MATERIAL TRACEABILITY, PRELIMINARY ANALYSIS INDICATES
  - FOR 122 ITEMS THE MATERIAL TYPE AND THICKNESS WERE KNOWN AND WERE CORRECT.
  - ACTUAL STRESS LEVELS ARE LOW.
  - NO DESIGN SIGNIFICANT DISCREPANCIES EXISTED.
- DISPOSITION OF ANY ITEMS UNRELATED TO MATERIAL TRACEABILITY, WHICH WOULD LIKELY BE FOUND IN A N-5 REVIEW, IS IN PROCESS AND WILL RESULT IN ACCEPTABLE MATERIAL.

SECTION IV

MTV PROGRAM  
FROM ASME CODE  
PERSPECTIVE

PRESENTED BY

E. J. HEMZY



### ASME CODE/MTV PROGRAM CORRELATION

CONCERNS INVOLVING MATERIAL CONTROL FOR ASME SECTION III CONSTRUCTION IS NOT UNIQUE TO THE BRAIDWOOD SITE. THE SUBJECT OF ASME SECTION III MATERIAL INVOLVING DOCUMENTATION AND TRACEABILITY HAS BEEN DEBATED AND DISCUSSED AT LENGTH IN ASME COMMITTEE MEETINGS, OVER COMMITTEE ACTIONS AND MOST CERTAINLY BY COMMITTEE PERSONNEL OUTSIDE OF ASME COMMITTEE ACTIVITIES. THE BOTTOM LINE, HOWEVER, IS THAT ASME CODE RULES SUPPORT THE IDEA THAT TRACEABILITY TO THE POINT WHERE MATERIAL IS CONSUMED OR INSTALLED IN SYSTEMS OR COMPONENTS DURING INSTALLATION SATISFIES ASME SECTION III CODE RULES.

THE QUESTION OF THE PHILLIPS, GETSCHOW STORES REQUEST PROCEDURE FOR MAINTAINING TRACEABILITY DURING INSTALLATION ACTIVITIES AT THE BRAIDWOOD SITE WAS REVIEWED AT LENGTH AT A MEETING IN EARLY 1984 WITH NRC, AUTHORIZED INSPECTION AGENCY, SARGENT AND LUNDY AND COMMONWEALTH EDISON COMPANY PERSONNEL. AT THIS MEETING, CODE KNOWLEDGEABLE PERSONNEL OF THE PARTIES INVOLVED REVIEWED THE SYSTEM IN DEPTH AND CONCLUDED THAT IT WAS A VIABLE SYSTEM AND THAT THE PHILLIPS, GETSCHOW PROCEDURES INCLUDED THE MINIMUM NECESSARY STEPS TO MEET THE ASME SECTION III CODE RULES. FURTHERMORE, THE PHILLIPS, GETSCHOW BRAIDWOOD SITE QUALITY ASSURANCE PROGRAM, WHICH INCLUDED THE STORES REQUEST PROCEDURES, HAS BEEN SURVEYED BY ASME ON THREE OCCASIONS AND HAS BEEN JUDGED ACCEPTABLE FROM BOTH PROGRAMMATIC AND IMPLEMENTATION ASPECTS FOR MEETING ASME CODE RULES. ASME CERTIFICATES OF AUTHORIZATION WERE ISSUED IN ALL CASES. FURTHERMORE, I HAVE BEEN PERSONALLY INVOLVED IN MEETINGS AND DISCUSSIONS OF THE PHILLIPS, GETSCHOW STORES REQUEST SYSTEM USED AT BRAIDWOOD AND I AGREE THAT IT WAS AND CONTINUES TO BE AN ACCEPTABLE PROGRAM AND CONFORMS TO ASME CODE RULES IN EFFECT FOR THE BRAIDWOOD SITE CONSTRUCTION.

IN ADDITION TO SCRUTINY BY ASME SURVEY TEAMS, THE PHILLIPS, GETSCHOW BRAIDWOOD SITE PIPING INSTALLATION ACTIVITIES HAVE BEEN UNDER CONTINUOUS SURVEILLANCE BY AUTHORIZED NUCLEAR INSPECTORS FOR ASME CODE COMPLIANCE. IT HAS ALWAYS BEEN MY CONSIDERED OPINION THAT THE INDEPENDENT THIRD PARTY INSPECTION BY AUTHORIZED INSPECTORS IS THE STRENGTH AND BACKBONE OF THE ASME BOILER AND PRESSURE VESSEL CODE FOR ASSURING COMPLIANCE WITH ASME CODE RULES. I BELIEVE I HAVE STRONG SUPPORT FOR THAT OPINION.

FURTHER TO THE POINT OF ADHERENCE TO THE REQUIREMENTS OF ASME CODE CONSTRUCTION, COMMONWEALTH EDISON COMPANY HAS HAD ASME NUCLEAR ACCREDITATION FOR ASSUMING OVERALL CODE RESPONSIBILITY FOR CONSTRUCTION OF ITS NUCLEAR POWER GENERATING STATIONS SINCE EARLY 1975. TOP MANAGEMENT HAS ALWAYS MAINTAINED A COMMITMENT TO SUPPORT THE ASME BOILER AND PRESSURE VESSEL CODE AND COMPLIANCE WITH ITS RULES.

THE CURRENT BRAIDWOOD MTV PROGRAM FOR 100% REVIEW OF DOCUMENTED RECORDS IS SUFFICIENTLY LONG AFTER WHEN THE WORK WAS PERFORMED TO RENDER POSITIVE CONCLUSIONS ABOUT INCOMPLETE MATERIAL TRACEABILITY BASED ON REVIEW OF MATERIAL MARKING SOMEWHAT MOOT IN MY OPINION. THE CODE RULES IN EFFECT FOR THE BRAIDWOOD CONSTRUCTION ONLY REQUIRED THAT MARKING BE MAINTAINED ON A MATERIAL UNTIL INSTALLATION. THESE WORDS CAN BE FOUND IN PARAGRAPH 4122 FOR ALL CLASSES OF CONSTRUCTION IN THE 1974 EDITION, 1975 SUMMER ADDENDA RULES WHICH ARE IN EFFECT FOR THE BRAIDWOOD CONSTRUCTION. IN THE TIME SPAN SINCE ACTUAL INSTALLATION OF MANY ITEMS, IT IS APPARENT THAT SOME OF THE IDENTIFICATION MARKINGS HAVE BEEN DISTORTED OR LOST BECAUSE OF SUBSEQUENT INSTALLATION ACTIVITIES. THIS DOES NOT, IN MY OPINION, REPRESENT NON-COMPLIANCE WITH CODE RULES.

THE ASME CODE RULES DO NOT ADDRESS THE NEED FOR MAINTAINING MATERIAL MARKING BEYOND THE TIME OF INSTALLATION. THE RE-REVIEWS OF THE RECORDS STRONGLY SUPPORT AND HAVE SHOWN, WITH LITTLE DOUBT IN MY MIND, THAT THE PHILLIPS, GETSCHOW COMPANY STORES REQUEST SYSTEM ASSURED ADEQUATE TRACEABILITY TO THE POINT OF INSTALLATION.

THE ASME CODE RULES HAVE ALWAYS RECOGNIZED THAT NOTHING IS PERFECT AND ALLOW FOR THE EXISTENCE OF NONCONFORMANCES. TO THAT POINT, AN HISTORIC MEETING WAS CONVENED IN FEBRUARY OF 1984 AT DALLAS, TEXAS AND ATTENDED BY MANY ASME CODE KNOWLEDGEABLE PEOPLE. MANY OF THOSE IN ATTENDANCE HAD "HANDS-ON" EXPERIENCE WITH ASME SECTION III NUCLEAR PLANT CONSTRUCTION. PERSONNEL REPRESENTED NRC, JURISDICTIONS, ARCHITECT/ENGINEERS, MANUFACTURERS, INSTALLERS, FABRICATORS, AND OWNERS. I ATTENDED THAT MEETING AND THERE WAS STRONG CONCERN THAT SPECIFIC SITE PROBLEMS ARE BLOWN OUT OF CONTEXT. AT THAT MEETING IT WAS AGREED THAT CONCERNS ARE BEST HANDLED BY CONTAINING THEM AT THE SITE AND RESOLVING THESE WITH THE INVOLVED PARTIES. FURTHER TO THIS POINT, AN ASME POSITION STATEMENT WAS DEVELOPED AS A RESULT OF THAT MEETING AND PUBLISHED IN THE SEPTEMBER, 1984 EDITION OF MECHANICAL ENGINEER, THE OFFICIAL PUBLICATION OF ASME. I WOULD LIKE TO QUOTE ONE VERY SIGNIFICANT PARAGRAPH FROM THAT ARTICLE.

"NONCONFORMANCE IS DEFINED IN NCA-9000 OF SECTION III, GENERAL REQUIREMENTS, AS A DEFICIENCY IN CHARACTERISTIC, DOCUMENTATION, OR PROCEDURE THAT RENDERS AN ITEM OR ACTIVITY UNACCEPTABLE OR INDETERMINATE. THIS DEFINITION OF NONCONFORMANCE CAN CONCEIVABLY ENCOMPASS A WIDE RANGE OF POSSIBILITIES, BOTH IN VARIETY AND LEVEL OF SIGNIFICANCE TO SAFETY AND ADEQUACY OF THE EQUIPMENT.

THE POSITION STATEMENT SIMPLY STATES THAT THE BEST APPROACH IN DECIDING WHAT NEEDS TO BE DONE TO VERIFY CODE COMPLIANCE WHEN A REPORTED DEFICIENCY MAKES THE QUALITY OF THE ITEM QUESTIONABLE, OR TO CORRECT A KNOWN DEFICIENCY, IS TO HAVE THE RESPONSIBLE PARTIES AGREE ON THE PLAN OF ACTION TO ENSURE THAT THE EQUIPMENT MEETS THE CODE."

IT IS MY CONSIDERED OPINION THAT THE MATERIAL TRACEABILITY VERIFICATION EFFORT AT BRAIDWOOD VERIFIES THAT THE PHILLIPS, GETSCHOW STORES REQUEST PROCEDURE ASSURED TRACEABILITY TO THE POINT OF INSTALLATION AND MET THE ASME SECTION III CODE RULES. TO REACH THIS CONCLUSION I HAVE REVIEWED THE WORK OF SITE PERSONNEL USED IN COMPILING THE DATA FOR THE MTV PROGRAM AND DISPOSITIONING OF NONCONFORMANCES AND I AM CONVINCED THAT THERE HAS BEEN, AND WILL BE, PROPER RESOLUTION OF MATERIAL INSTALLATION. THIS REVIEW HAS REINFORCED MY CONFIDENCE IN THE PHILLIPS, GETSCHOW STORES REQUEST SYSTEM FOR ASSURING INSTALLATION OF REQUIRED MATERIAL IN ASME SECTION III CONSTRUCTION AT BRAIDWOOD. THIS IS CONSISTENT WITH THE POSITION WHICH I STATED IN EARLY 1984 AT THE MEETING OF COMMONWEALTH EDISON COMPANY, NRC REGION III PERSONNEL, AND OTHER INVOLVED PARTIES. THE QUALITY RECORDS ON FILE AT THE SITE ALONG WITH RELATED DOCUMENTATION STRONGLY SUPPORT THAT CORRECT MATERIAL WAS INSTALLED IN PIPING SSTEMS AT THE BRAIDWOOD NUCLEAR PLANT.

## MATERIAL TRACEABILITY VERIFICATION (MTV) PROGRAM

### ASME CODE/BRAIDWOOD MTV PROGRAM CORRELATION

- ASME SECTION III RULES ARE SATISFIED BY MATERIAL TRACEABILITY TO POINT OF CONSUMPTION OR INSTALLATION
- PHILLIPS, GETSCHOW COMPANY STORES REQUEST PROCEDURE MEETS ASME CODE RULES
- AUTHORIZED NUCLEAR INSPECTION IS INDEPENDENT OVERVIEW AND VERIFICATION OF CONFORMANCE TO CODE RULES
- COMMONWEALTH EDISON COMPANY MANAGEMENT IS COMMITTED TO ASME CODE COMPLIANCE
- BRAIDWOOD MTV PROGRAM VERIFIES THAT PHILLIPS, GETSCHOW COMPANY STORES REQUEST PROCEDURE PROVIDED METHOD FOR TRACKING REQUIRED MATERIAL TO POINT OF INSTALLATION
- ASME POSITION STATEMENT RECOGNIZES NONCONFORMANCES AND RESOLUTION TO MEET ASME CODE RULES



SECTION V

MTV  
PROGRAM  
OVERSIGHT

PRESENTED BY

T. E. QUAKA

OVERVIEW OF THE MTV PROGRAM  
BY EDISON SITE QUALITY ASSURANCE

- 0 PARTICIPATED IN THE PROGRAM DEVELOPMENT
- 0 REVIEWED AND APPROVED IMPLEMENTING PROCEDURES
- 0 PERFORMED AUDITS AND SURVEILLANCES OF BOTH FIELD AND OFFICE ACTIVITIES. ONLY MINOR ITEMS WERE IDENTIFIED.
- 0 REVIEWED ALL MTV RELATED NCR'S GENERATED (ON-GOING) TO:
  - ASSURE PROPOSED DISPOSITIONS WERE APPROPRIATE
  - VERIFY THAT CORRECTIVE ACTIONS ARE PROPERLY COMPLETED

INDEPENDENT OVERVIEWS

MTV PROGRAM AND ITS IMPLEMENTATION WAS MONITORED/REVIEWED  
BY

- 0 EDISON QUALITY ASSURANCE
- 0 PHILLIPS, GETSCHOW QUALITY ASSURANCE
- 0 AUTHORIZED NUCLEAR INSPECTORS
- 0 NATIONAL BOARD
- 0 INSTITUTE OF NUCLEAR POWER OPERATIONS (INPO)
- 0 BRAIDWOOD CONSTRUCTION ASSESSMENT PROGRAM (BCAP)



EXAMPLES OF Q.A. ITEMS IDENTIFIED

- 0 RESOLVE LOG INCONSISTENCIES DUE TO PROCEDURAL CHANGES.
- 0 PROCEDURE REVISION ADDED A FORM AND DETERMINATION OF NEED FOR BACKFIT WAS TO BE PERFORMED.
- 0 ADD COMMENTS ON THE CHECKLISTS TO PROVIDE CLARITY WHEN CORRECTIONS ARE MADE.

### OVERVIEW BY OTHER GROUPS

- 0 EDISON CORPORATE QUALITY ASSURANCE PERFORMED AN EVALUATION OF THE MTV PROGRAM AND CONCLUDED THAT THE ESTABLISHED PROGRAM ADEQUATELY ADDRESSED THE ORIGINAL NRC CONCERNS.
- 0 AUTHORIZED NUCLEAR INSPECTORS HAVE MONITORED THE PROGRAM ON AN ON-GOING BASIS.
- 0 PGCO QUALITY ASSURANCE MONITORED THEIR PORTION OF THE MTV PROGRAM THROUGH AUDIT AND SURVEILLANCE.
- 0 OTHER ORGANIZATIONS LOOKING AT THE PROGRAM INCLUDED INPO, BCAP, AND MOST RECENTLY THE NATIONAL BOARD AUDIT TEAM. THEIR COMMENTS HAVE BEEN ADDRESSED AND HAVE PROVIDED ADDED ASSURANCE THAT THE MTV PROGRAM WAS PROPERLY EXECUTED.

### GENERAL CONCLUSION:

SITE QUALITY ASSURANCE INVOLVEMENT IN CONJUNCTION WITH THE COMMENTS FROM THE OTHER ORGANIZATIONS LEAD TO OUR CONCLUSION THAT THE MTV PROGRAM HAS BEEN PROPERLY IMPLEMENTED AND DOCUMENTED.

SECTION VI

SUMMARY

PRESENTED BY

M. J. WALLACE

# MATERIAL TRACEABILITY VERIFICATION (MTV) PROGRAM

## SUMMARY

### OVERALL OBJECTIVE

- ° ASSURE THAT BRAIDWOOD PIPING INSTALLATION IS FULLY IN COMPLIANCE WITH THE ASME CODE

### ACTIONS SUBSEQUENT TO MTV PROGRAM IMPLEMENTATION

- ° REVIEW BY ASME CODE EXPERTS
- ° REVIEW BY ASME NATIONAL BOARD
- ° MEETINGS AND DISCUSSIONS WITH ILLINOIS DIVISION OF BOILER INSPECTION, ATTENDED BY ILLINOIS DEPARTMENT OF NUCLEAR SAFETY

### CONCLUSIONS

- ° THE BRAIDWOOD PIPING INSTALLATION COMPLIES WITH THE ASME CODE
- ° COMMONWEALTH EDISON'S INTENTION IS TO CONTINUE TO ASSURE COMPLIANCE WITH THE ASME CODE REGARDING RESOLUTION OF ANY PROBLEMS IDENTIFIED AND COMPLETION OF NEW INSTALLATIONS