Director of Compliance
US NRC Region 1
631 Park Avenue
King of Prussia, PA 19406

[redacted]
February 14, 1985

Dear Sir:

Reference 1 : Letter from W.G. Dick dated January 26, 1985.
Reference 2 : Notes of Telephone Discussion with W. Lazarus, Jan. 31, 1985
Reference 3 : Notes of Telephone Discussion with W. Lazarus, Feb. 12, 1985
Reference 4 : Notes of Telephone Discussion with W. Lazarus, Feb. 14, 1985
Attachment 1 : Safety & Quality Concerns Relating to Nine Mile 2.

This letter conveys information discussed with Mr. Lazarus, References 2, 3, and 4 which relates to safety and quality concerns contained in Reference 1.

Mr. Lazarus requested the information be submitted in written form ("bullets") and I have attempted to comply (Attachment 1). I also recommended a conference to ensure the limitations of "bullet" formats and telephone discussions do not miss the pervasive, damaging nature of these programmatic concerns which weigh adversely upon safety and quality. I believe that these concerns have roots contributory in no small way to the tragic state of an otherwise viable industry.

For expediency, I conveyed six observations to Mr. Lazarus concerning Shoreham which arose in connection with our discussions. I feel it is important to emphasize again that a major factor in my concerns at Nine Mile 2 arose from my experiences at Shoreham and particularly the methods, results and outcome of readiness assessment.

Very Truly Yours,

ORIGINAL SIGNED BY
W. Gordon Dick

ATTACHMENT 1: SAFETY & QUALITY CONCERNS RELATING TO NINE MILE POINT 2

1. Allowances for quality control measures and other related factors were omitted or unrealistically represented on project schedules prepared and used during 1984.

2. Omission of these allowances caused and propogated conditions adverse to safety and quality.

3. These conditions resulted in the improper use of programs such as the construction completion control program (CCCP) specifically intended to control and assure quality upon completion of construction of individual components and structures.

4. The interaction of programs at release for checkout and initial testing was highly redundant, inconsistent, even chaotic and jeopardized documentation and tracking of quality status.

5. Equipment access control was deficient causing access violations and uncontrolled equipment tampering. When found by responsible construction personnel, these occurrences were documented and reported for corrective and preventative measures to higher authorities with little effective result.

6. In a meeting to expedite a monetary award milestone, a senior manager was advised that only "bootleg" copies of drawings might be available for weekend work necessary to achieve the award. In response he stated that we knew how to get around that and stated in effect: Just keep the drawings rolled up in your pockets out of sight if QC is around.

7. Engineering specification and vendor requirements for electrical switchgear fastners required torque checks prior to operation, a requirement in dire conflict with schedule objectives. At a meeting convened with various site disciplines a senior construction representative personally marked up changes and deletions to the engineering specification to accommodate the schedule requirements. The site engineering personnel present were in effect pressured, even railroaded to accept the changes. The individual involved, by his own admission, did not have technical expertise in the equipment involved.

8. In a late evening meeting to review program and personnel changes proposed by Management Analysis Corp. (MAC), a senior manager opened the meeting by stating that first and foremost we must "think commercial" even though we don't agree with MAC, Nine Mile 2 is our company's biggest moneymaker and we can't do anything to hurt that. The resulting decisions, policies and personal attitudes were influenced by this pre-condition and in my judgment further compromised adherence to acceptable quality standards.

NOTE: These observations did not appear, in the judgment of this observer, to be marginal, isolated conditions but evolved from pervasive managment lapses rooted in attempts to achieve schedule and cost incentive goals established on unrealistic premises.

MIDLAND NUCLEAR STATION.

STONE & WEBSTER MICHIGAN INC. CONSTRUCTION IMPLEMENTATION OVERVIEW. ESTIMATING & MONITORING DATA FOR EVALUATING PERSONNEL REQTS.

THE DATA COMPILED IN THIS DOCUMENT RELATES THE ESTIMATED NUMBER OF CIO PERSONNEL TO THE RATE OF SUBMITTAL OF UNITS OF PRODUCT (UNITS PER WEEK) FOR RANGES OF LOT SIZES AND RANGES OF CIO OBSERVATION RATES PER MANHOUR. FOR THE TWO PRINCIPAL SAMPLING PLANS DEFINED IN QCI 7.01.

THE DATA CAN BE USED FOR ESTIMATING PURPOSES AND CAN ALSO BE USED TO TRACK PROGRESS AND PERFORMANCE OF CIO AND THE WORK OVERVIEWED.

THE DATA MAY BE APPLIED ON AN OVERALL COLLECTIVE BASIS OR INDIVIDUALLY BY GROUP, MODULE, MAJOR DISCIPLINE OR COMMODITY. SINCE THE RELATIONSHIPS ARE PROPORTIONAL, SCALING PRODUCT SUBMITTAL RATES UP OR DOWN BY A GIVEN FACTOR. (eg 5, 10 etc) REQUIRES ONLY SCALING THE NUMBER OF PERSONNEL UP OR DOWN BY THE SAME AMOUNT.

SUMMARY OF COMPUTATION METHOD.

THE COMPUTATION METHOD IS EXPLAINED IN TERMS OF THE FOLLOWING REPRESENTATIVE SYMBOLS :

1. PRODUCT SUBMITTAL RATE IN UNITS PER WK : r_p.
2. LOT SIZE IN UNITS OF PRODUCT : N_L
3. SAMPLE SIZE IN UNITS OF PRODUCT : N_s
4. AVERAGE NUMBER OF ATTRIBUTES PER UNIT OF PROD: N_A.
5. NUMBER OF ATTRIBUTE OBSERVATIONS PER WK : N_O
6. OBSERVATION RATE IN OBS PER MANHOUR : r_o
7. NUMBER OF C/O PERSONNEL REQ'D (40HR/WK): N_p.

FROM THESE TERMS THE NUMBER OF C/O PERSONNEL N_p IS COMPUTED FROM THE EQUATIONS BELOW :

$$N_O = \frac{r_p N_A N_s}{N_L} \quad \text{OBSERVATIONS/WEEK.}$$

$$N_p = \frac{N_O}{40 r_o} \quad \text{NUMBER OF C/O PERSONNEL}$$

OR

$$N_p = \frac{r_p N_A N_s}{40 r_o N_L} \quad \text{NUMBER OF C/O PERSONNEL}$$

THIS COMPUTATION METHOD IS USED IN THE TABLES AND GRAPHS CONTAINED IN THIS DOCUMENT. (N_A ASSUMED EQUAL TO 12.

MANPOWER ASSESSMENT TABLES & COMPUTATIONS.

TABLE Nº 1 - 95·5 SAMPLING PLAN

PRODUCT SUBMITTAL RATES PER WK	LOT SIZES IN UNIT OF PRODUCT	SAMPLE PLAN USED QC1·7.01	SAMPLE SIZE REQD ATT 3.2	OBS PER WEEK REQD	OBS RATE IN OBS PER MHR	MHRS PER WK REQD	ESTD Nº OF C/C PERSONN
800	100	95·5	50	4800	1.0	4800	120
					1.5	3200	80
					2.0	2400	60
	200			2400	1.0	2400	60
					1.5	1600	40
					2.0	1200	30
	400			1200	1.0	1200	30
					1.5	800	20
					2.0	600	15
1000	100	95·5	50	6000	1.0	6000	150
					1.5	4000	100
					2.0	3000	75
	200			3000	1.0	3000	75
					1.5	2000	50
					2.0	1500	38
	400			1500	1.0	1500	38
					1.5	1000	25
					2.0	750	19
1200	100	95·5	50	7200	1.0	7200	180
					1.5	4800	120
					2.0	3600	90
	200			3600	1.0	3600	90
					1.5	2400	60
					2.0	1800	45
	400			1800	1.0	1800	45
					1.5	1200	30
					2.0	900	23

NOTES:

1. SAMPLE SIZES ARE DERIVED FROM QC-1 7.01 ATT 3.2
2. AVGE Nº OF ATTRIBUTES OBSERVED PER UNIT OF PRODUCT IS 12
3. OBSERVATION RATES PER MHR RANGE BASED ON TO DATE DAT
4. ASSUMES 40 HOUR WEEK AVGE PER PERSON.

DATA ILLUSTRATED ON GRAPH Nº 1.

MANPOWER ASSESSMENT TABLES & COMPUTATIONS

TABLE Nº2 90·10 SAMPLING PLANS.

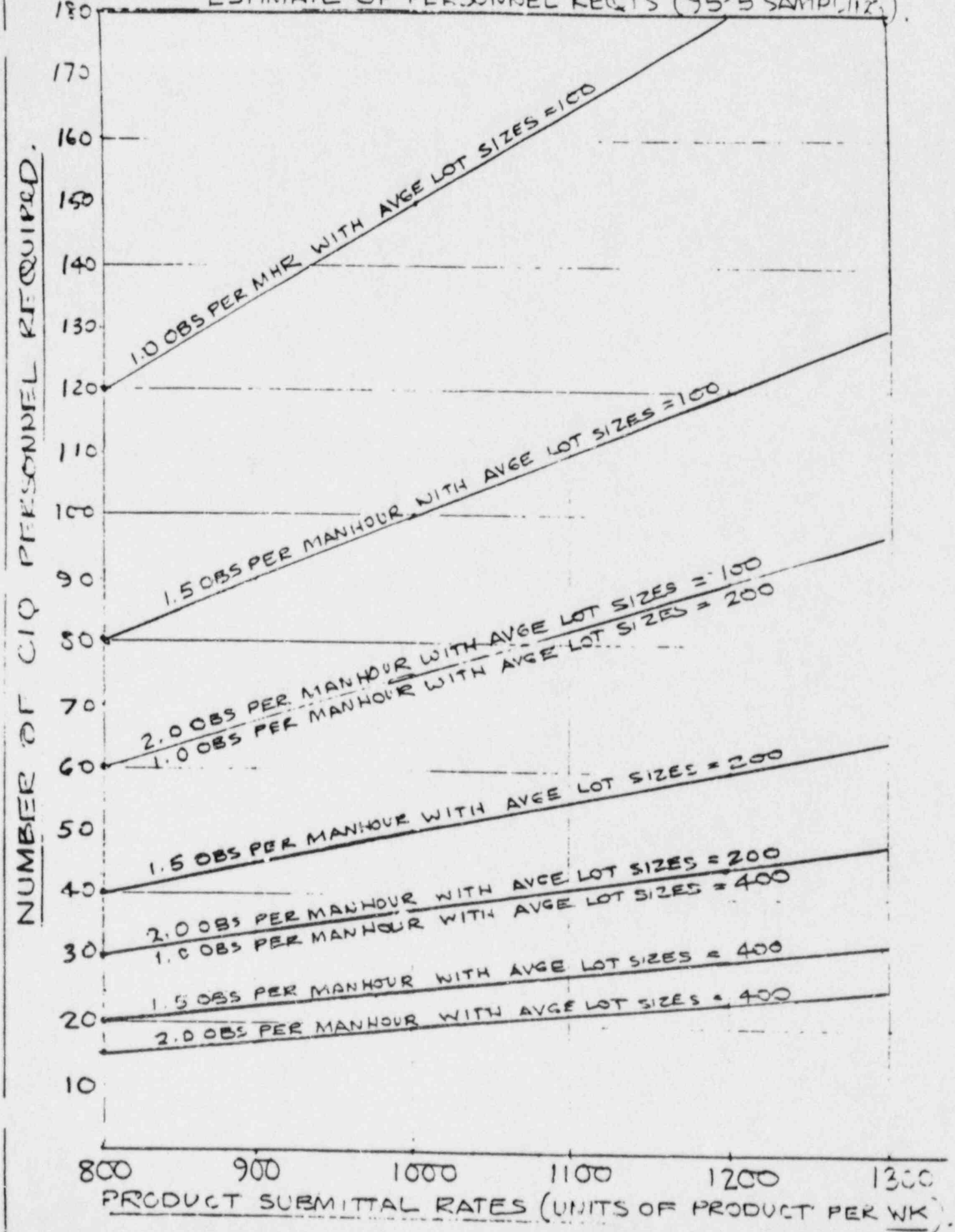
PRODUCT SUBMITTAL RATES PER WK	LOT SIZES IN UNITS OF PRODUCT	SAMPLE PLAN USED QCI 7.01	SAMPLE SIZE REQD ATT 3.2	OBS PER WEEK REQD	OBS RATE IN OBS PER MHR	MHRS PER WK REQD	ESTD Nº C/O PERS.
800	100	90-10	20	1920	1.0	1920	48
					1.5	1280	32
					2.0	960	24
	200		32	1536	1.0	1536	38
					1.5	1024	26
					2.0	768	19
	400		50	1200	1.0	1200	30
					1.5	800	20
					2.0	600	15
1000	100	90-10	20	2400	1.0	2400	60
					1.5	1600	40
					2.0	1200	30
	200		32	1920	1.0	1920	48
					1.5	1280	32
					2.0	960	24
	400		50	1500	1.0	1500	38
					1.5	1000	25
					2.0	750	19
1200	100	90-10	20	2880	1.0	2880	72
					1.5	1920	48
					2.0	1440	36
	200		32	2304	1.0	2304	58
					1.5	1536	38
					2.0	1152	29
	400		50	1800	1.0	1800	45
					1.5	1200	30
					2.0	900	23

NOTES

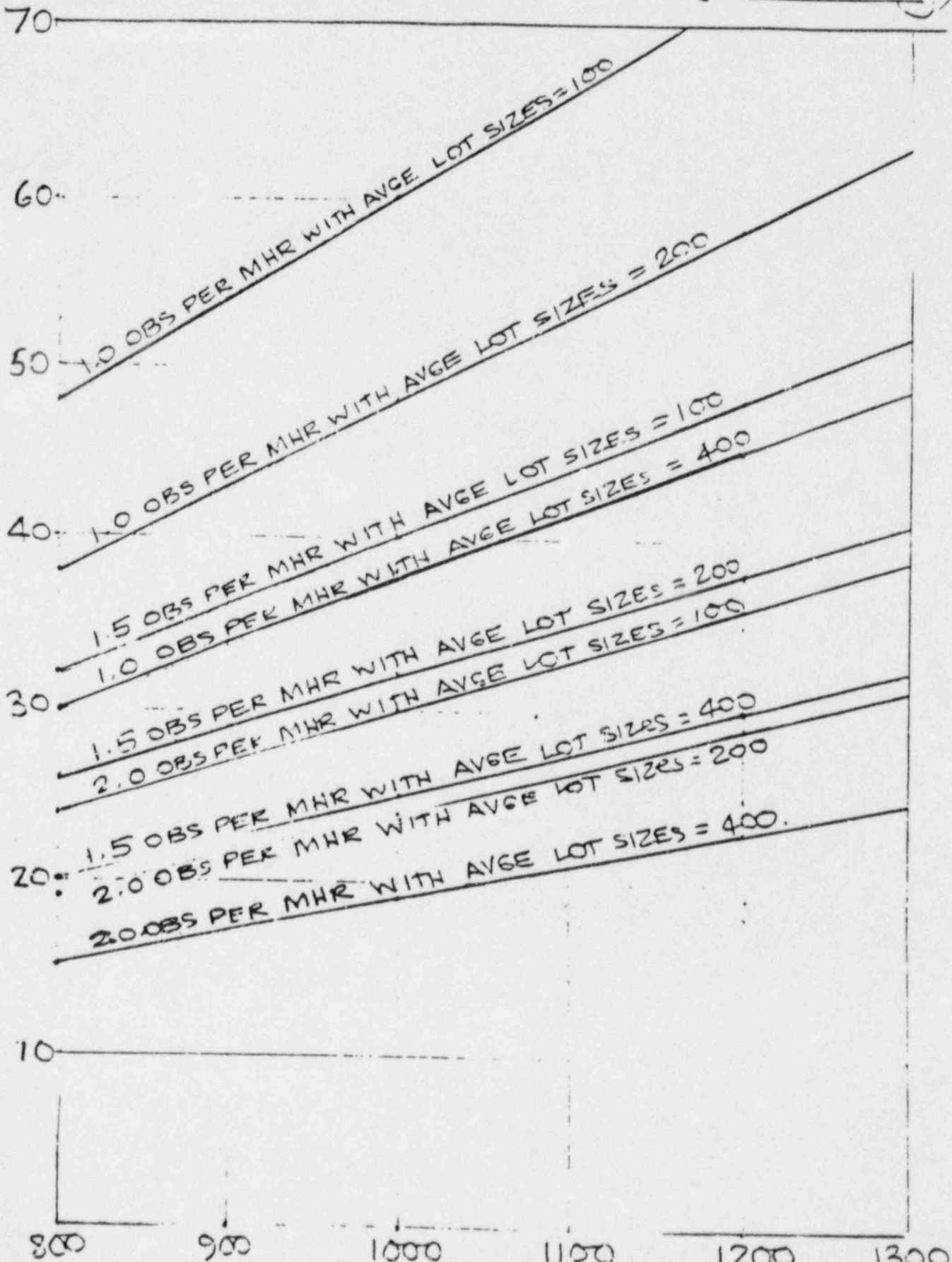
1. SAMPLE SIZES ARE DERIVED FROM QCI 7.01 ATT 3.2.
2. AVGE Nº OF ATTRIBUTES OBSERVED PER UNIT OF PRODUCT IS 12
3. OBSERVATION RATES PER MHR RANGE BASED ON TO-DATE DATA
4. ASSUMES 40 HOUR WEEK AVGE PER PERSON.

DATA ILLUSTRATED ON GRAPH Nº2.

GRAPH #1 STONE & WEBSTER MICHIGAN INC
CONSTRUCTION IMPLEMENTATION OVERVIEW
ESTIMATE OF PERSONNEL REQTS (95-5 SAMPLING).



GRAPH N°2 STONE & WEBSTER MICHIGAN INC
CONSTRUCTION IMPLEMENTATION OVERVIEW
ESTIMATE OF PERSONNEL REQTS (90-10 SAMPLING)



DISCUSSION & CONCLUSIONS.

COMPARISON OF GRAPHS 1 & 2 ILLUSTRATES THE MANPOWER DIFFERENCES RESULTING FROM SAMPLING ON A SUSTAINED BASIS AT 95-5 CONFIDENCE VERSUS OPERATING AT 90-10 CONFIDENCE FOR LOT SIZES OF LESS THAN 281 UNITS OF PRODUCT.

AT LEVELS OF LOT SIZES 281 AND GREATER THE MANPOWER LEVELS ARE ESTIMATED TO BE THE SAME WHETHER A 95-5 OR 90-10 PLAN IS USED, ALTHOUGH ACCEPT/REJECT LEVELS FOR 90-10 SAMPLING ARE HIGHER AS ILLUSTRATED BY QCI 7.01 ATT 2.

TO ILLUSTRATE THE MANPOWER REQUIREMENTS AND DIFFERENCES, THE FOLLOWING VALUES ARE EXTRACTED FROM THE GRAPHS, FOR AN ASSUMED PRODUCT SUBMITTAL RATE OF 1000 UNITS OF PRODUCT PER WEEK AND AVERAGE LOT SIZES OF 200 WITH CIO OBSERVATION RATES OF 2.0 OBSERVATIONS PER MANHOUR :

SAMPLING SUSTAINED AT :	95-5	90-10
CIC PERSONNEL REQD :	38	24.

DATA COMPILED FROM A COMBINATION OF CIC SCHEDULE MONITORING AND FROM CIO TREND DATA CAN BE COMBINED TO MONITOR ACTUAL RESULTS FOR THE MIDLAND CIO TASK FORCE. THE PARAMETERS WHICH CAN BE TRACKED FOR THIS PURPOSE ARE :

1. NUMBER OF CIO PERSONNEL ENGAGED IN EVALUATIONS & VERIF.
2. NUMBER OF MANHOURS PER WEEK EXPENDED.
3. NUMBER OF OBSERVATIONS PER WEEK PERFORMED
4. SAMPLE SIZES USED
5. LOT SIZES USED
6. SAMPLE PLAN USED
7. NUMBER OF ATTRIBUTES USED PER UNIT OF PRODUCT.
8. NUMBER OF LOTS EXAMINED WEEKLY
9. WEEKLY PRODUCT SUBMITTAL RATES.

NIAGARA MOHAWK

NIAGARA MOHAWK POWER CORPORATION/300 ERIE BOULEVARD WEST SYRACUSE, N.Y. 13202/TELEPHONE (315) 474-15

September 14, 1984

Dear [redacted]

I have been requested by Mr. Haehl to respond to your letter of August 24, 2984.

Again, I wish to thank you for your interest in the Nine Mile II Project. I also wish to thank you and Mr. W. Gordon Dick for discussing your concerns with us during our meeting of May 31, 1984.

While it is my recollection that we made no commitments regarding future meetings or responses, I wish to inform you that subsequent to our meeting, I initiated an investigation of the matter. The investigation included interviews of a number of Stone & Webster and Niagara Mohawk personnel and a review of relevant documents. Based upon this investigation, we are satisfied with Stone & Webster's explanation of the events which led up to the termination of employment of Mr. Dick by Stone & Webster and your voluntary resignation.

I am sorry that any confusion existed regarding our response; however, following our completion of the examination of the activities and events which culminated in Mr. Dick's termination, we are satisfied that such decision by Stone & Webster was not to the detriment of the project or to our ratepayers.

Very truly yours,

John W. Keib
Senior System Attorney

JWK:jml

RESUME PROFILE - FEBRUARY 1985

1. PERSONAL

NAME : W. Gordon Dick
ADDRESS [redacted]
TELEPHONE

2. EDUCATION

UNDER-GRADUATE : Higher National Certificate, Kilmarnock, Scotland, 1963
GRADUATE : B.S. Mechanical Engineering, Glasgow, Scotland, 1965
POSTGRADUATE : M.S. Thermodynamics, Birmingham, England, 1966
BUSINESS : Computer Applications, Westinghouse, Pittsburgh, 1969
MANAGEMENT : Management Training Course, CE, Windsor, Conn., 1970
AUDITING : QA Auditing, Stone & Webster, Boston, MA., 1984
OTHER : Four Year Apprenticeship, G&K Ltd., Kilmarnock, 1963

3. PROFESSIONAL

5/74 - 5/84 : Stone & Webster Engineering Corp., Boston, MA.
Performed key management roles on six major projects, including Construction Specialist, Contract Administrator, Area Superintendent, Manager of Planning & Scheduling and Special Consultant on cost and quality assurance matters concerning federal and state regulations.

7/70 - 5/74 : Combustion Engineering Inc., Windsor, Conn.
Managed and supervised activities on five major power projects as Field Engineer, Plant Maintenance Supervisor and Outage Manager. Activities included oil fired, coal fired and nuclear projects in several locations including Maine, Pennsylvania, Michigan, New York, and Georgia.

7/68 - 7/70 : Westinghouse Electric Corporation, Pittsburgh, PA.
Advanced Projects Engineer for advanced reactor concepts including containment systems, transient studies and fuel optimization studies. Also Lead Start-up Engineer on a major nuclear project in New York.

7/66 - 7/68 : The Nuclear Power Group Ltd., Knutsford, England
Design Engineer in reactor design including transient analysis, safety analysis and emergency equipment replacement studies. Also served as Start-up Engineer for pre-fuel load testing and fuel load supervisory activities on two gas cooled reactors in England.

The above information is true and correct.

W. Gordon Dick