1/18/01

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of:	)	
	)	
Consolidated Edison Company of New York, Inc.	)	Docket No. 50–247
	)	
(Indian Point Nuclear Station, Unit No. 2)	)	
	)	

AFFIDAVIT OF Richard S. Maurer

I, Richard S. Maurer, being duly sworn, state as follows:

1. I am a Corporate NDE Level III QDA currently employed by Westinghouse Electric LLC (Westinghouse) . I am currently a consulting engineer in Westinghouse's steam generator services organization. Until April 2000, I was employed by ABB Combustion Engineering Nuclear Power, Inc. (ABB-CE) as the manager of the Data Analysis and Data Management department. Westinghouse purchased the nuclear business of ABB-CE effective as of May 2000.

2. I was recently asked to examine elements of a nondestructive examination (NDE) inspections of the steam generators at the Indian Point 2 nuclear power plant conducted in the spring of 1997 utilizing a technique referred to as eddy current testing (ECT). Indian Point 2 is owned and operated by the Consolidated Edison Company of New York, Inc (Consolidated Edison). The purpose of this affidavit is to provide my assessment of the adequacy of the 1997 inspection of Indian Point 2 steam generators low row u-bends and to evaluate issues surrounding the 1997 Indian Point 2 steam generator non-destructive examination (NDE) inspection raised by the Nuclear Regulatory Commission in a November 20, 2000 document entitled "Final Significance Determination for a Red Finding and Notice of Violation at Indian Point 2 – Report No. 0500247/2000-010.

3. I have not participated in any steam generator inspections at the Indian Point Unit 2 Nuclear Plant (Indian Point 2), either in my capacity as an employee of ABB-CE or now as an employee of Westinghouse.

4. Beginning in July 2000, I have at various times in my present position at Westinghouse consulted for Consolidated Edison or Indian Point 2 personnel regarding steam generator issues, including those issues associated with the steam generator eddy current testing (ECT) inspections at Indian Point 2 occurring in 1997 and 2000.

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5. My professional qualifications and experience are set forth in my resume, which is attached as an exhibit hereto. I have over 22 years of experience in eddy current testing of steam generator tubing and I have conducted inspections at or provided consulting services for over 20 different plants.

6. Prior to preparing this affidavit I reviewed the following documentation relative to the 1997 and 2000 steam generator eddy current testing inspections at Indian Point Unit 2:

a) 7/27/2000 NRC Steam Generator Special Inspection Preliminary Inspection Results
b) 8/31/2000 NRC Steam Generator Special Inspection Final Inspection Report
c) 11/20/2000 NRC Final Significance Determination for a Red Finding and Notice of Violation
d) 6/2/2000 Condition Monitoring and Operational Assessment (Excerpts)
e) 4/14/2000 Consolidated Edison Root Cause Evaluation (Steam Generator Tube Leak Event)
f) 11/1/2000 NRC Lessons Learned Task Force Report
g) 5/3/2000 Root Cause Evaluation and Recovery Activities Technical Material (Excerpts)
h) 2/7/1997 Consolidated Edison Letter to NRC Describing 97 SG Inspection Program Plans and 5/29/1997 NRC Approval
i) Slides from 4/24/1997 Consolidated Edison Presentation to the NRC on the 97 Inspection Program (Excerpt)
j) 7/24/1997 Consolidated Edison Letter to NRC Responding to Oral RAI re Cecco and Plus Point Data Analysis
k) Indian Point-2 Steam Generator Inspection Technical Specifications
l) 1997 Inspection Specification
m) 1997 Westinghouse Analysts Guidelines for Plus Point Inspections (Excerpts)
n) 1997 SG Inspection- Westinghouse Field Service Report Summary
o) 1997 SG Inspection 45 day Letter to NRC dated 7/29/1997
p) 8/6/1997 Condition Monitoring & Operational Assessment
q) 6/27/1997 Consolidated Edison Presentation to EPRI on 1997 IP-2 SG Inspection Results
r) 7/16/1997 NRC Inspection Report 97-07
s) EPRI Steam Generator Guidelines, Rev. 4
t) 1997 Westinghouse Data Analysis Technique Procedure DAT-IP2-001, revision 0.

7. I have also reviewed relevant ECT data from the 1997 SG inspection of low row u-bends. My technical position regarding the adequacy of the 1997 Consolidated Edison ECT inspection of low row u-bends is described in items 8 through 18 below.

8. Compliance with EPRI Guidelines and Standards

Revision 4 of the EPRI PWR Steam Generator Examination Guidelines, which was in effect in 1997, required a minimum sample size of 20% of the row 1 and 2 u-bends be inspected using a qualified ECT technique. All row 1 tubes in the Indian Point 2 steam generators were plugged prior to startup as a precaution. In 1997 Consolidated Edison conservatively elected to inspect 100% of the u-bends in all row 2 tubes and all row 3 tubes. According to the examination plan submitted by Consolidated Edison to the NRC on February 7, 1997, the original proposed inspection of row 2 and 3 u-bends was to be performed with a bobbin / cecco-5 combination probe. U-bends which would not permit the passage of this probe type would be examined with a rotating pancake coil. However, the inspection technique that was actually used in 1997 was a [mid-range] rotating plus point coil. This inspection technique was qualified by EPRI and is identified as Examination Technique Specification Sheet (ETSS) 96511. The plus point inspection technique was the most sensitive eddy current examination available in 1997 for the detection of PWSCC in the u-bend area.

The 1997 Consolidated Edison inspection of 100% of the row 2 and 3 u-bends with a [mid-range] plus point coil satisfied the EPRI Guidelines requirements for examination scope, and the plus point coil satisfied the requirement for use of a qualified technique. The examination program also satisfied the requirements of the IP-2 Plant Technical Specifications, which required that this inspection program be submitted for NRC staff review and concurrence prior to the examination.

9. Data Analyst Training Materials

The plus point test for low row u-bends was relatively new in early 1997 and only a handful of plants had used the technique prior to this time. Revision 4 of the EPRI Guidelines section 6.2 states "For units with limited operating experience, or a lack of active damage mechanisms and associated data, reliance should be placed on similar plants with active damage mechanisms to assemble a data set."

The u-bend plus point data used at IP-2 for the analyst training session prior to the 1997 ECT inspection satisfied this requirement. The data consisted of two laboratory samples and three tubes from an operating steam generator. All of the tubes used for training were the same configuration as the installed tubing at IP-2 (7/8" OD x 0.050" nominal wall thickness) with flaws in the u-bend area of a row 1 bend radius. The lab samples had flaws (presumably EDM notches) at the bend tangent, and the three tubes from an operating steam generator consisted of three axial flaws near the bend tangent points as well as one circumferential flaw at the bend apex.

A larger training data set would have been preferable; however the industry as a whole did not have a significant data library of u-bend plus point data available to use as analyst training materials. ABB-CE also had commenced implementing the plus point technique in late 1996 and early 1997; and our organization did not have extensive training materials available either.

10. Instructions Provided to Data Analysts

The instructions for plus point analysis of low row u-bends used for the 1997 Indian Point 2 inspection is contained in Westinghouse procedure DAT-IP2-001, revision 0, "Data Analysis Technique Procedure" dated April 28, 1997. This procedure includes an Analysis Technique Specification Sheet (ANTS) IP2-97-E "U-bend Plus Point RPC" which specifically addresses the calibration requirements for this inspection technique.

There were some differences in the specific setup the data analysts were instructed to employ in the 1997 examination versus EPRI technique ETSS 96511, none of which were material to the adequacy of the setup utilized.

ANTS IP2-97-E establishes the span set-point at 50% screen height for a 40% OD axial flaw, versus the 96511 set-point of 2 grid divisions for the 40% ID axial and circumferential flaws. This alternate setup used at Indian Point 2 results in a span value that is lower (signal appears larger) than the EPRI requirements.

In addition, ETSS 96511 establishes phase (10 - 15 Degrees) on the 40% ID notch. The plus point technique, per ANTS IP2-97-E, sets phase such that residual probe motion was horizontal with the 100% axial notch at 30 to 35 degrees. A review of the calibration standard used in ETSS 96511 shows that when probe motion is set to horizontal with the 100% axial notch at 30 to 35 degrees, the resultant phase of the 40% ID axial notch is at approximately 11 degrees. Therefore the set-point in IP2-97-E used in the 1997 Indian Point 2 inspection satisfied the lower end EPRI guidance threshold for phase.

For data screening, the EPRI ETSS required the analyst to scroll through the area of interest while viewing the lissajous, as well as a review of terrain plots. These requirements are specified in section 11.4 of Westinghouse procedure DAT-IP2-001, Revision 0. In addition, although not addressed in the EPRI ETSS, the Westinghouse procedure appropriately includes the following passage which is intended to encourage analysts to report flaws "The phase relationships and confirmation by other coils should be viewed in the light of other influences which the probe experiences. The analyst should feel free to use his/her discretion in reporting signals which are felt to be indicative of a degraded condition, but do not necessarily meet all of the criteria indicated above. The over-riding rule of analysis should be: if you think there is an indication, report it."

11. Review of EDM Notch Standard Utilized

The calibration standards which were used during the 1997 Indian Point 2 inspection met industry standards and followed the then-current EPRI guidance – EPRI PWR Steam Generator Examination Guidelines, Rev. 4.

Section 4.5 states of the EPRI Guidelines, Revision 4 states:
"Electro-discharge machining (EDM) and laser-machined notch standards are typically used to establish setup conditions for rotating probe technology. The notches should be of:

- both axial and circumferential orientation, and
- standard lengths and depths on the OD and ID."

This methodology was employed in the 1997 inspection. There is no further guidance provided for specific depths of the notches.

EPRI ETSS 96511 set-up parameters show the phase and span values are established on the 40% ID notch. The EPRI ETSS' sometimes use additional calibration artifacts that are not required generically by the EPRI Guidelines.

The calibration standards used at Indian Point 2 in 1997 contained a variety of axial and circumferential notches, but they did not include a 40% ID axial notch. However, Section H.4.3 of the EPRI Guidelines, Revision 4 states: "Alternate calibration methods may be used without re-qualification if it can be demonstrated that the calibration method is equivalent to those described in the qualified acquisition technique or qualified analysis technique."

Alternate calibration methods are discussed in greater detail below. Although the 1997 IP-2 calibration standards did not include a 40% ID notch, they satisfied the EPRI requirements at that time based on the acceptability of using alternate calibration methods.

12. Analyst Experience/Qualification With U-Bend Plus Point Data

Since this was a relatively new technique, the majority of the analysts in the industry in 1997 would not have been qualified to EPRI Appendix G criteria for the analysis of plus point coil data. The Appendix G criteria requires that the analyst has an 80% probability of detection at a 90% confidence level for flaws which are $\geq$ 40% through-wall depth. An integral premise of this criteria therefore, is the acknowledgement that not all flaws will be detected by the analysts.

The EPRI QDA program was revised in the fall of 1996 to include plus point data for the first time; however, earlier versions did not include this probe type. This does not reflect an inadequacy in the qualification of the analysts under the standards at the time of the Indian Point 2 inspection in the spring of 1997. This is due to the fact that there simply wasn't sufficient plus point data available in the industry at this time to construct a test which would satisfy the statistical confidence factors required under Appendix G. All plants desiring to use the plus point coil for u-bend examinations during this time frame would have confronted this problem.

Moreover, Section G.6 of the EPRI Guidelines, Revision 4 contains the following guidance for analyst qualification on new techniques and damage mechanisms. "New technique/damage mechanism qualification may be accomplished during annual training or may be deferred until re-qualification. The testing requirements shall be the same as the initial QDA examination. The individual shall be considered qualified if the requirements of G.4.2.2.2 are met. After the qualification requirements are successfully met, individuals' records should be updated to reflect re-qualification on new technique/damage mechanisms."

13. **Review of Restrictions at Top Tube Support**

The row 2 u-bend tubes which were noted as restricted in 1997 show a bobbin test extent of either 06C or 06H. According to the 1997 Westinghouse data analysis procedure, DAT-IP2-001, Revision 0, Section 7.3.8: "Extent tested for a restricted tube (RST) shall be reported as the furthest complete support structure, tubesheet, or tube end." Therefore the 0.610" diameter bobbin probe actually passed through the support structure but was restricted in the u-bend itself. In addition, the restrictions may well have been attributable to the use of a different design bobbin probe than had been used previously. According to the
Consolidated Edison response to question 11 in the NRC Request for Additional Information (RAI) received on April 28, 2000, the bobbin probe used during inspections prior to 1997 in the low row u-bends was a 0.610" diameter ball joint flex probe. This probe type is specifically designed to negotiate tight radius u-bends. The probe used in 1997, however, was a standard bobbin probe which inherently is more difficult to insert through a u-bend.

14. **Review of Eddy Current Data**

I first reviewed the 1997 plus point data for Indian Point 2 SG 24 Row 2 Column 67 to formulate an opinion on whether there was something unique in the data which would indicate that a detection problem existed so that some additional action should have been taken. This indication is relatively straightforward and the data quality is good in this u-bend. This would indicate to me that the technique was performing as expected. Although this was the first PWSCC reported at IP-2, it's appearance in 1997 would not have been surprising, given that this is a Westinghouse design steam generator with over 20 years of operation and that prior examinations had been conducted with a much less sensitive bobbin coil technique.

I also reviewed the 1997 data for the tube which leaked in February 2000, Row 2 Column 5 in steam generator 24, to determine whether this indication could have been reported in the 1997 inspection. I am of the opinion that it is not a certainty that the flaw in SG 24 R2 C 5 could or should have been identified during the 1997 inspection based on the standards and guidelines appropriately used and in effect at the time.

With the benefit of hindsight and the review conducted in the 2000 time frame after the leak event, the indication in R 2 C 5 can be detected in the 1997 plus point data.

However, the use of circumferential filters in the data analysis software utilized during the 2000 reviews suppresses much of the geometry effects from tube ovalization occurring at the point of the flaw and results in a more clearly defined flaw response. In addition, monitoring the horizontal component on a strip chart during the 2000 reviews indicates a suspect area of the u-bend which would cause the analyst to further interrogate this region. However, no specific guidance or requirement was included in the EPRI Guideline Revision 4 technique in effect during 1997 that would have influenced the analysts to use these tools. The examinations conducted by ABB-CE during this timeframe also did not use circumferential filters or horizontal strip charts. It is my opinion that only through the insight gained from the 2000 review of the 1997 data that these tools have been shown to be an effective means of enhancing flaw detection.

It is also important to observe that, given the nature of eddy current technology, none of the ECT techniques used for steam generator inspections will detect all of the flaws all of the time. The POD is never assumed to be 100% in any industry guidance or standard. This is equally as true in the year 2000/2001 as it was in 1997. In addition, data analysts may not detect 100% of the flaws present 100% of the time. The actual industry requirement for a QDA is an 80% probability of detection at a 90% confidence level.

With the benefit of hindsight, the 1997 data for SG 24 Row 2 Column 5 can be considered as containing high noise due to tube ovality and OD deposits. However in 1997, there were no industry criteria available for analysts to evaluate in a quantitative manner what was and was not high noise. Senior analysis personnel would not have reviewed data from this tube as neither the qualified primary or secondary analyst reported an indication in this u-bend. Since the u-bend plus point technique was relatively new in 1997 and a significant volume of training data was not available, data analysis personnel could not be expected to have had extensive exposure to poor quality data or noisy data for use in comparing plus point data generated during an actual inspection.

15. During a July 26, 2000 meeting between the Nuclear Energy Institute Steam Generator Task Force (NEI SGTF) and NRC, a paper was presented by a representative on the Task Force from Northern States Power Company titled "U-Bend Noise Study". The study quantified plus point coil noise levels from the tube samples used in the EPRI technique (ETSS 96511) and compared those values to Indian Point 2 and two other Westinghouse design plants. The data presented shows that the average peak to peak and vertical maximum values for the EPRI data set were approximately 1.1 volts and 0.4 volts respectively. The data from Indian Point 2 yielded approximately 1.4 volts and 0.7 volts. Thus, the IP-2 data is only "slightly noisier" than the tubing used in the EPRI qualification. The results for the other two Westinghouse design plants showed noise levels that were lower than the EPRI data set.

However, during the spring of 1997, contemporaneous to the Indian Point 2 ECT inspection, ABB C-E was also conducting plus point coil examinations of low row u-bends at the Maine Yankee plant. A 50 tube review of noise levels from this inspection that I had conducted in August 2000 showed peak to peak and vertical maximum values of 1.63 volts and 0.51 volts respectively. This level of noise does not differ appreciably from the Indian Point 2 1997 data. Prior examinations at Maine Yankee had been conducted with a pancake coil. While the data contained more noise than the EPRI qualification, the perspective of the inspection team at the time, including my perspective, was that we were using the best technique available at the time which offered improved detection capability relative to the previous pancake coil examinations.

16. Similarly, at Indian Point –2 in the spring of 1997, the first use of the plus point for low row u-bends followed bobbin coil examinations during previous inspections. This represents a quantum leap forward in terms of probability of detection. During the same time frame, there was no industry data available for use by analysts from which they could infer that deep PWSCC indications could be masked by the influence of ovality and OD deposits.

By 1997 only a few plants had conducted plus point coil testing of low row u-bends; and this was considered a new, albeit magnitude better, technique for use by the industry to inspect steam generators. Based on the limited information and training base available to the data analysts with this new technique, the absence of the development at that date of industry data quality standards for the technique, and the absence of plus point data in the QDA program it is an unlikely expectation that the 1997 IP-2 data should have been recognized as "too noisy".

17. Finally, I also reviewed the 1997 plus point data from several tubes with flaws identified in the 2000 inspection to determine whether they could have been identified during the 1997 inspection. There were a total of eight row 2 tubes with u-bend indications reported in the 2000 inspection, which it is claimed should have been identified in the 1997 inspection. Row 2 Column 5 is discussed above. The additional 7 u-bend tubes with 1997 indications, as identified in 2000, are listed below along with whether the flaw was detected with both the plus point mid-range coil and the high frequency plus point coil or only the high frequency plus point coil.

Tube Identification	Detection Coil
SG 21 Row 2 Col 87	Both
SG 23 Row 2 Col 85	High Frequency Coil Only
SG 24 Row 2 Col 4	High Frequency Coil Only
SG 24 Row 2 Col 69	Both
SG 24 Row 2 Col 71	High Frequency Coil Only
SG 24 Row 2 Col 72	Both
SG 24 Row 2 Col 74	High Frequency Coil Only

Since the high frequency coil did not exist in 1997, my review of prior data was limited to those indications which were detected by both coils in the 2000 inspection. Of the three tubes noted above that were detectable with both probe types in the 2000 examination, a re-analysis of the 1997 data (although it was conducted with the knowledge of the 2000 data that the flaw exists) identifies small indications present in the 1997 time frame as well. However, the fact that the indications were not reported in 1997 is not unexpected given the relatively new use of the plus point coil by the QDAs during this timeframe, coupled with a probability of detection for any ECT technique which always is less than 100%.

18. It is also relevant that current steam generator inspections are invariably followed by historical ECT data reviews to determine growth rate which is used in the operational assessment. In my experience, it is the norm, rather than the exception, that plants with active stress corrosion cracking detect flaws in prior cycle data during subsequent inspections that had not been reported during the earlier inspection time. Another reason that this occurs, beyond growth of the indications with the passage of time, is that the state of ECT is not static; and the technology has historically improved with the passage of time. Thus, in 1997, the mid-range plus point coil was the state-of-the-art qualified technique for low row u-bend ECT inspections. Three years later, the data and knowledge base for this probe technique had greatly expanded. Moreover, the additional techniques noted above, as well as a qualified high frequency plus point probe that did not exist in 1997, were also available for use in conducting the historical ECT data review of the 1997 Indian Point 2 data. Therefore, it is my opinion that identifying three indications in the subsequent 2000 inspection that previously existed, but were not identified during the 1997 inspection using the same probe (which was state-of- the- art in 1997) is not unexpected.

My opinion in this regard is further supported by recent industry experience. During the July 2000 EPRI Steam Generator workshop, two utilities presented papers on U-bend examinations. Both utilities showed existing u-bend indications which had been dispositioned as a non-flaw in previous inspections. Subsequently, in the case of one utility, the tube leaked during shutdown and in the other case the tube leaked during an in-situ pressure test.

The foregoing statements are true and correct to the best of my knowledge and belief.

Richard S. Maurer

Richard S. Maurer
Corporate Level III Consulting Engineer
Westinghouse Electric Company LLC

Sworn and subscribed to before me on this 18th day of January, 2001.

Julianne Sheridan

Notary Public

My Commission expires: 1-31-05

Exhibit 1

RESUME OF RICHARD S. MAURER

SUMMARY OF QUALIFICATIONS

Mr. Maurer is directly responsible for the planning, execution, and reporting of results for inservice steam generator examinations. He has been involved in eddy current testing since 1978 and currently holds a Level III QDA certificate. Mr. Maurer helped develop the original QDA program by serving on the EPRI Implementation Team. He also served on the EPRI ISI Guidelines committee to develop revision 4 of the PWR Inspection Guidelines. Mr. Maurer has authored numerous papers presented at industry technical forums. He is the NDE representative on the CEOG Steam Generator Task Force and is the Westinghouse representative on the NDE task group for the NRC/Argonne National Laboratory steam generator mockup program.

EXPERIENCE

WESTINGHOUSE ELECTRIC COMPANY

Corporate Level III Consulting Engineer **4/2000 to Present**

As the corporate Level III Mr. Maurer is responsible for oversight of the Westinghouse certification program and works closely with the condition monitoring and operational assessment group. Mr. Maurer continues to provide consulting services and is assigned as the Senior Analyst or Independent QDA on several inspections per year.

ABB COMBUSTION ENGINEERING NUCLEAR POWER **1978 to 4/2000**

Manager – NDE Technology

As a manager, Mr. Maurer was responsible for the Data Analysis and Data Management groups. In addition, Mr. Maurer was the Principal ECT Level III and provided oversight of the training and certification programs within CENP. Mr. Maurer continued to provide consulting services and was assigned as the Senior Analyst on several inspections per year.

Consulting Engineer – Steam Generator Data Analysis **1988 to 1993**

As a Consulting Engineer, Mr. Maurer was responsible for the technical accuracy of all SG ECT examinations conducted by Combustion-Engineering. This included R&D activities for technique development as well as the supervision of analysis activities on complex inspections.

Principal Field Service Engineer - Examination Services & Products **1985 to 1988**

As a Principal Field Service Engineer, Mr. Maurer's responsibilities included the overall planning, implementation, and evaluation of eddy current examination programs. As a Level III in Eddy Current Testing it was also his responsibility to ensure compliance with all applicable codes and regulations, as well as to ensure that the optimum testing techniques were employed and that the resultant data was correctly interpreted.

Exhibit 1

RESUME OF RICHARD S. MAURER

Senior Field Service Engineer - Inspection Services **1984 to 1985**

As a Senior Field Service Engineer, Mr. Maurer was responsible for the administrative and technical management of inservice steam generator examinations. Mr. Maurer also acted as a liaison between C-E and utility management.

Field Service Engineer, Inspection Services Group **1983 to 1984**

As Field Service Engineer, Mr. Maurer was responsible for the preparation of examination programs, procedures, and instructions which form the task program. It was also his responsibility to supervise the examiners on site, implement the examination program, and ensure that the resultant data was interpreted correctly. At the home office, Mr. Maurer conducted R&D work to enhance inspection techniques, wrote inspection reports, and provided support for ongoing field inspection programs.

Development Engineer, Nuclear Systems Services **1982 to 1983**

As a Development Engineer, Mr. Maurer was responsible for the refinement of irradiated fuel inspection fuel inspection techniques, planning and logistics of field inspections, and the preparation of procedures and inspection reports. He also assisted utilities with fuel and control element transfers, incore detector removal and installation, reactor internal disassembly and inspection, etc.

Engineering Specialist, Systems Integrity Services **1981 to 1982**

As an Engineering Specialist, Mr. Maurer was responsible for the maintenance of equipment and inspection hardware used in fuel and reactor examinations. He also conducted field inspection and service programs at various nuclear facilities. At the home office, Mr. Maurer generated proposals, wrote procedures, and provided support for field activities.

Technician, Engineering Development and Services, **1978 to 1981**

As a technician Mr. Maurer's duties included: damaged fuel reconstitution, fuel sipping, visual support for fuel transfer and reactor disassembly, and eddy current testing of fuel components, heat exchangers, and steam generators.

MULTI-CIRCUITS, INC.

Chemical Technician - Quality Assurance Department **1977 to 1978**

Mr. Maurer was responsible for the analysis of plating solutions used in the manufacture of printed circuit boards. His duties also included the sectioning and microanalysis of P/C boards for Quality Assurance.

Exhibit 1

RESUME OF RICHARD S. MAURER

PRATT & WHITNEY AIRCRAFT

Chemical Technician - Pollution Control Laboratories **1973 to 1976**

Mr. Maurer was responsible for the identification and analysis of toxic chemicals in concentrated form and in dilute rinse water, determination of proper neutralization processes and the operation of primary, secondary and tertiary treatment plants.

<u>EDUCATION</u>

Mohawk Valley Community College -

State of New York - High School Equivalency Degree

EX 6