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*for a sustainable future*

## OCCASION

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Ihr Zeichen	Unser Zeichen	(0222) 48 900-0* Durchwahl	Datum
	ABA/Dkfm.Hu/Fo	14	18th March, 1986

Reference: Project No. US/INT/85/207 - 5th Workshop on  
Maintenance and Plant Inspection in  
Petroleum Refineries - Contract No. 86/11

F I N A L R E P O R T

This is to confirm that the following technical papers,  
given to each participant of the above mentioned Workshop,  
were also handed over to Mr. Derrough

1. Folder on "Plant Inspection" by O.P. Hornasek
2. Folder on "Maintenance of Rotating Equipment" by H. Miglitsch
3. Folder on "Maintenance Management" by J. Maier
4. Information on "Energy Conservation" by B.Kögl/D. Taylor
5. Information on "Instrumentation and Analysis  
Equipment" by H. Kloyber
6. Information on "Analytic Trouble Shooting" by H. Huber

Our experts have held extensive lectures on the above subjects;  
schedule of these lectures was as follows:

Monday, Feb. 17, 1986

- 9.00 Opening Session at UNIDO
- 11.00 arrival in Refinery Schwechat, welcome by  
Refinery Manager and introduction to ÖMV
- 12.00 Lunch

- 13.30 QUESTION SURVEY
- 14.00 PLANT INSPECTION (lecturer: Hornasek)  
to 17.00
- Corrosion Problems in Petroleum Refineries
  - Scheduling Equipment for Inspection
  - Inspection Methods
  - Deterioration & Failure of Equipment and its Prevention

Tuesday, Feb. 18, 1986

- 9.00 PLANT INSPECTION (lecturer: Hornasek)  
to 12.00
- Corrosion Protection by Organic Layers. Inspection Procedures
  - Lifetime of Equipment
  - Detailed Equipment Inspection
- 12.00 LUNCH
- 13.00 - On-Stream Inspection & Special Testing Methods  
to 16.30 Part 1: Ultrasonics
- On-Stream Inspection & Special Testing Methods Part 2: Thermovision, Acoustic Emission

Wednesday, Feb. 19, 1986

- 9.00 PLANT INSPECTION (lecturer: Hornasek)  
to 12.00
- Practical Demonstration of select. NDT-Techniques - visit to workshops
  - Special Schwechat Refinery Problems and their solutions
  - Filing and Documentation
- 12.00 LUNCH
- 13.00 - lecture on MATERIAL STANDARDS by Dipl.Ing. Raaber, TÜV  
to 16.00 (expert from Technical Safety Institute, Vienna)
- 16.00 leaving Refinery to have "Social Evening" at  
Heurigen "Fuhrgassl Huber", Neustift, with members  
of Federal Economic Chamber, UNIDO staff, ÖMV associates  
to 21.30 return to Hotel Strudlhof

Thursday, Feb. 20, 1986

- 9.00 PLANT INSPECTION (lecturer: Hornasek)  
to 12.00
- NDT-Equipment Show:  
Ultrasonic flaw detectors,  
Magnetic Particle Testing Equipment, Penetrants  
Eddy Current, Fibrescopes, Acoustic Emission  
Equipment, Infrared Scanner, etc.

- Busride to the ACOUSTIC EMISSION TRAILER  
with onsite demonstrations in cooperation  
with TÜV-Vienna

12.00 LUNCH

13.30 Excursion to CENTRAL WELDING INSTITUTE, VIENNA  
to 16.00 (Schweißtechnische Zentralanstalt Wien, SZA)

Friday, Feb. 21, 1986

9.00 MAINTENANCE OF ROTATING EQUIPMENT (lecturer: Miglitsch)  
to 12.30 (compressors, turbomachinery)

12.30 LUNCH

13.30 free disposal for participants

Monday, Feb. 24, 1986

9.00 ANALYTIC TROUBLE SHOOTING (lecturer: Huber)  
to 12.00

12.00 LUNCH

13.00 ANALYTIC TROUBLE SHOOTING - continue  
to 16.30

Tuesday, Feb. 25, 1986

9.00 ANALYTIC TROUBLE SHOOTING - continue  
to 12.00

12.00 LUNCH

13.00 Visit at Austrian Federal Economic Chamber  
presentation of different equipment producing  
companies; Question and Answer Session with  
suppliers. End of session about 17.00 o'clock

Wednesday, Feb. 26, 1986

9.00 Visit to ELIN UNION AG, Vienna

12.30 Lunch in ELIN

14.00 Visit to SGP, SIMMERING GRAZ PAUKER, Vienna  
to 16.00

The group was accompanied by Mr. Derrough.

Thursday, Feb. 27, 1986

9.00 MAINTENANCE (lecturer: Maier)  
to 12.00 - General overview/introduction  
- The total maintenance function  
- Maintenance strategies  
- Shutdown Planning and scheduling  
- Maintenance by contractors

12.00 LUNCH

13.00 Maintenance Organization & Maintenance  
to 17.00 Information System (lecturer: Maier)

Friday, Feb. 28, 1986

9.00 ENERGY CONSERVATION (lecturer: Kögl/Taylor)  
to 12.30 - Introduction  
- Energy Conservation - General methods of  
energy recovery and energy saving  
- Energy management and its position within the  
organization of the Refinery Schwechat  
- Energy consumption analysis as a basis for  
energy concepts  
- Collection and compilation of data on energy  
consumption  
- Technological measures on energy recovery  
taken or proposed in the Refinery Schwechat

13.30 free disposal for participants

Monday, March 3, 1986

9.00 INSTRUMENTATION AND ANALYSIS  
to 12.00 EQUIPMENT (lecturer: Kloyber)  
- Part 1: Pneumatic, Electronic Instruments

12.00 LUNCH

13.00 - Part 2: Process Analyzers  
to 16.00 Visit to Crude-Oil-Distillation IV, Control Room,  
Distriputed Digital Control System

Tuesday, March 4, 1986

9.00 Visit to Refinery Workshops  
to 12.30

12.30 LUNCH

13.30 Visit to ÖMV Central Technical Department  
to 16.00 Gerasdorf, with guide and extensive lecture.  
Many questions by participants were treated.

Wednesday, March 5, 1986

9.00 QUESTION AND ANSWER SESSION with Mr. Maier,  
to 12.00 Mr. Miglitsch, Mr. Hornasek and Mr. Huber  
The questions are collected at the beginning  
of the Workshop.

12.00 LUNCH

13.00 QUESTION AND ANSWER SESSION - continue  
to 15.00

16.00 Sightseeing trip through Vienna by bus;  
Dinner compliment ÖMV: Restaurant Kahlenberg  
to 20.00 return to Hotel Strudlhof

Thursday, March 6, 1986

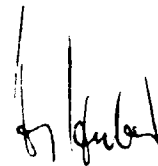
9.00 Experience Exchange among participants in  
to 17.00 VIENNA INTERNATIONAL CENTER under participation  
of Mr. J.E. Vande Ven, UOP London, Mr. J.W. Esdrugo,  
UOP Madrid, Mr. S. Winton, Fa. Bechtel Great  
Britain Ltd. and Mr. Derrough, UNIDO.

Friday, March 7, 1986

9.00 Group met again at VIC, final discussion with  
Mr. Maier, ÖMV and Mr. Derrough, UNIDO.

14.00 CONCLUDING SESSION; followed by reception;  
End about 17.00 o'clock.

Participants also completed a questionnaire and evaluation of  
these forms is attached for your information.



Enclosure

H. Huber



5. As a whole, has this WORKSHOP been

5 a) very valuable to you and your job

17 b) valuable

c) hardly valuable, because .....

d) without any value, because .....

6. Please grade organization and administration of this WORKSHOP.

10	8	1	3							
1	2	3	4	5	6	7	8	9	10	
very good									bad	

7. Suggestions as to how similar WORKSHOPS could be improved:

.....  
.....  
.....  
.....

8. Which additional themes should be treated ?

.....  
.....  
.....  
.....

Thank you for completing this questionnaire !



To point 7) Suggestions as to how similar WORKSHOPS could be improved:

- Time for maintenance could be much longer, specially discussion of the participants' technical objects.
- The workshop should be held in summertime when the weather would be more favourable.
- Instead of having one complete day for visit to the workshops, the visits should be distributed during all three weeks, so the lectures are not so long.
- More time to be allotted for discussions.  
Sitting arrangement should be smokers and non-smokers.  
Adequate time once a week may be allowed for shopping, visits, etc.
- More time to be allotted to solving real problems.
- Company visits should be made on separate days.
- For the advantage of undeveloped countries the workshop should be conducted at a less sophisticated refinery in one of these countries.  
UNIDO should make the countries who have participated in these workshops to permanent members.  
UNIDO should establish an "Information Exchange Office" and members should communicate their experience through such office.
- More time in the refinery areas of inspection and maintenance.  
More practice in maintenance personnel training.
- It should be a more specialized course either MAINTENANCE or INSPECTION at one time - not both
- Similar Workshops could be improved by having discussions about impact of refinery in the development of industry in the country.
- One member would like to be informed about the solutions of refinery problems in order to solve his own difficulty.
- Training should be more practical oriented.  
Facilities, practices and procedures in the refinery to be explained in detail. Participants to be given opportunity to see all the facilities of the refinery-process units, workshops, loading bays, etc.

- Participation of attendants to the workshop as lectures, i.e. themes prepared by them.  
Separate workshops for inspection and maintenance.
- Questions not related to themes should not be allowed to be discussed during lectures but after lectures.
- More time for informal discussion, where experiences could be exchanged among participants.
- Not to be organized during winter time.  
More time to be allotted for discussion on questions by participants.

To point 8) Which additional themes should be treated ?

- Control of rotating equipment. Vibration monitoring and analysis.
- Spare parts, stores system, organization.  
Practical training on N.D.T. apparatus (new modles).  
Themes about P.W.H.T.
- Practical training, N.D.T. practical.
- Plant and workshop visiting should have more time than this time.
- Costs of maintenance and ways of improving maintenance predictive methods.
- Regional integration of petroleum refineries in undeveloped countries.
- To have the themes very successful, I suggest the particular workshop should be for a particular profession e.g. 1986 maintenance, 1987 inspection, 1988 processing, etc.  
To combine inspection with maintenance is not fully profitable.
- Fire fighting and plant safety operations,  
workshop to take place in autumn or spring time, not winter.
- I think a lot was covered. What about the electrical side of maintenance.
- How to improve quality of product.

- How do you really solve the problems happening to refinery equipment; with which material do you repair it.
- New project and revisions of projects.  
Warehouse organization.  
Shut-down planing and control.
- Maintenance electrical equipment.
- Safety and fire fighting in petroleum refineries.  
Maintenance of electrical facilities.
- Development of new technologies.

ÖMV Training Department  
Hintere Zollamtsstraße 17  
A-1030 Vienna, Austria

Vienna, April 22, 1986

FINANCIAL STATEMENT

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Project No. US/INT/85/207 - 5th Workshop on  
Maintenance and Plant Inspection in Petroleum  
Refineries - Contract No. 86/11

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1. Preparation, organization and conduct of WORKSHOP, including provision of conference facilities, and external manpower needs	AS	135.000,--
2. Service of consultant	'	20.000,--
3. Luncheons and refreshments for 22 participants	"	47.000,--
4. Transport to and from hotel-refinery/ to various excursions and from hotel-UNIDO	"	67.000,--
5. Provision of all documents, manuscripts, drawings, etc.	"	66.000,--
6. Insurance during WORKSHOP for 22 participants	"	16.000,--
7. 2 ÖMV experts average and more per day 15 days = 30 days	"	114.000,--
8. telexes, letters by participants to home country, packing material for mailing of conference material	"	5.000,--
9. Hospitality programs (2 evenings)	"	14.300,--
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	AS	484.300,--
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