



INTERNATIONAL ATOMIC ENERGY AGENCY

International Symposium on
Nuclear Power Plant Life Management

4–8 November 2002
Budapest, Hungary

PROGRAMME

**Organized by the
International Atomic Energy Agency (IAEA)**

**Hosted by the
Government of Hungary
through the
Hungarian Nuclear Society (HNS)**

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Scientific Secretary: V. Lyssakov, IAEA

Conference Services: K. Morrison, IAEA

Local Organizer: I. Vidovszky, HNS

Location of the Symposium:

Hotel Agro
Normafa St. 54
H-1121 Budapest
Tel: +361 375 4011
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E-mail: h.agro.bp@mail.matav.hu

Working language: English

Resolutions: No resolutions may be submitted for consideration on any subject, no votes will be taken.

TIMETABLE

SUNDAY, 3 November 2002

15:00–18:30 Registration
18:30 Reception

MONDAY, 4 November 2002

08:00 Registration
09:00–10:00 **Session 1: Opening Addresses**
10:00 **Session 2: Plant Life Management (PLIM)**
10:00–12:30 Sub-Session 2.1: 1 Overview paper
10:40–11:00 Coffee/Tea break
11:00–12:30 Sub-Session 2.1: 4 technical papers
12:30–14:00 Lunch
14:00–16:00 Sub-Session 2.2: 5 Technical papers
16:00–16:20 Coffee/Tea break
16:20–18:00 Sub-Session 2.3: 5 Technical papers

TUESDAY, 5 November 2002

08:30–10:10 Sub-Session 2.4: 5 Technical papers
10:10–10:30 Coffee/Tea break
10:30 **Session 3: Special Aspects of PLIM:
Economics and End of Life Cycle**
10:30–12:30 Sub-Session 3.1: 3 Overview papers
12:30–14:00 Lunch
14:00–15:40 Sub-Session 3.2: 5 Technical papers
15:40–16:00 Coffee/Tea break
16:00 **Session 4: Technological and Operational
Aspects of PLIM**
16:00–17:30 Sub-Session 4.1: 1 Overview,
3 Technical papers
17:30–18:15 Sub-Session 4.2: 2 Technical papers

WEDNESDAY, 6 November 2002

08:30–09:15 Sub-Session 4.2: 2 Technical papers
09:15–10:40 Sub-Session 4.3: 4 Technical papers
10:40–11:00 Coffee/Tea break
11:00–12:30 Sub-Session 4.4: 4 Technical papers
12:30–14:00 Lunch
14:00–15:30 Sub-Session 4.5: 4 Technical papers
15:30–15:50 Coffee/Tea break
15:50 **Session 5**
15:50–17:40 Sub-Session 5.1: 4 Technical papers

THURSDAY, 7 November 2002

08:30–10:10 Sub-Session 5.2: 5 Technical papers
10:10–10:30 Coffee/Tea break
10:30–11:10 Sub-Session 5.2: 2 Technical papers
11:10–12:30 Sub-Session 5.3: 4 Technical papers
12:30–14:00 Lunch
14:00–15:00 Sub-Session 5.3: 3 Technical papers
15:00–15:20 Coffee/Tea break
15:20–17:00 **Session 6: Panel on Integrated Plant Life
Management — Why and How**
17:00 **Closing Remarks**

FRIDAY, 8 November 2002

Technical Tour

SUNDAY, 3 NOVEMBER 2002**15:00–18:30 Registration****18:30 Reception (Hotel Agro)****MONDAY, 4 NOVEMBER 2002****08:00 Registration****09:00–10:00 SESSION 1: OPENING ADDRESSES**

M. ElBaradei, Director General, IAEA

J. Ronaky, Director General,
Hungarian Atomic Energy Authority

J.-P. Hutin, Symposium Chairman

10:00–18:00 SESSION 2: PLANT LIFE MANAGEMENT (PLIM)**10:00–12:30 Sub-Session 2.1****Co-chairpersons: S. Azeez, Canada
E. van Walle, Belgium**

<i>No of Paper IAEA-CN-92/</i>	<i>Name</i>	<i>Designating Member State/ Organization</i>	<i>Title of paper</i>
1	J.-P. Hutin	France	Overview: Integration of Plant Life Management in Operation and Maintenance
10:40–11:00 Coffee/Tea Break			
14	G. Vinod	India	Application of Risk Based Inspection as a Part of Life Management of NPP's
18	N.I. Karpunin	Russian Federation	Russian Federation Normative Approach to the Question of Management of Life Time NPP
21	P. Tipping	Switzerland	Swiss Regulatory Use of Databanks for Nuclear Power Plant Life Management, Surveillance and Safety Analyses
22	M.A. Rinckel	USA	Aging Management Review for License Renewal and Plant Life Management
12:30–14:00 Lunch			

14:00–16:00 Sub-Session 2.2
Co-chairpersons: M. Koyama, Japan
N. Steinberg, Ukraine

<i>No of Paper IAEA-CN-92/</i>	<i>Name</i>	<i>Designating Member State/ Organization</i>	<i>Title of paper</i>
3	E. van Walle	Belgium	Extended Surveillance as a Support to PLIM
10	K. Simola	Finland	Use of Plant Specific Information in Life Management
11	H. Nopper	Germany	FANP Concept for Plant Life Management and Recent Experience
12	A. Tóth	Hungary	Renewal of the Operation License for Paks NPP, Regulatory Program
19	S. Bugaenko	Russian Federation	PLIM Support R&D Programme of Russian Federationn MINATOM

16:00–16:20 Coffee/Tea break

16:20–18:00 Sub-Session 2.3
Co-chairpersons: R. Caro, Spain
F. Gillemot, Hungary

<i>No of Paper IAEA-CN-92/</i>	<i>Name</i>	<i>Designating Member State/ Organization</i>	<i>Title of paper</i>
4	S. Vodenicharov	Bulgaria	Rest-life Time Management of the Kozloduy NPP, Units 3-4
5	S. Azeez	Canada	Enhancing Plant Performance in Newer CANDU Plants Utilizing PLIM Methodologies
6	J. Hahn	Czech Republic	Ageing Significantly at Temelin Start-up Process
16	P. D. Vidican	Romania	Component Selection for Ageing Management
7	M. Brumovsky	Czech Republic	Plant Life Management Programme in NPP Dukovany and Some Examples

TUESDAY, 5 NOVEMBER 2002

08:30–10:10 **SESSION 2: PLANT LIFE MANAGEMENT (cont'd)**

Sub-Session 2.4

**Co-chairpersons: J. Stejskal, Switzerland
L. Debarberis, European Commission**

<i>No of Paper IAEA-CN-92/</i>	<i>Name</i>	<i>Designating Member State/ Organization</i>	<i>Title of paper</i>
2	V.G. Petrosyan	Armenia	Information Support to Operating Personnel with the Use of SPDS
8	S.D. Bedrose	Egypt	Requirement and Training of Manpower for Co-generation NPP
13	A. Bhatnagar	India	Review on Ageing Management of NPPs — Experience Feed back from Research Reactors
15	S.G. Jung	Korea, Rep of	Lifetime Assessment on PWR Reactor Vessel Internals in Korea
17	R. Rucareanu	Romania	Specific Aspects for Cernvoda — Unit 1 NPP Life Assurance

10:10–10:30 **Coffee/Tea break**

10:30–15:40 **SESSION 3: SPECIAL ASPECTS OF PLIM:
ECONOMICS AND END OF LIFE CYCLE**

10:30–12:30 **Sub-Session 3.1**

**Co-chairpersons: J. R. DeMella, USA
B. Gabaraev, Russian Federation**

<i>No of Paper IAEA-CN-92/</i>	<i>Name</i>	<i>Designating Member State/ Organization</i>	<i>Title of paper</i>
23	J.-P. Chatry	France	Overview: EDF Decommissioning Programme — A Global Commitment to Safety, Environment and Cost Efficiency of Nuclear Energy
24	J.R. DeMella	USA	Overview: Electric Utility Deregulation — A Nuclear Opportunity
25	G.G. Young	USA	Overview: Overview of the Role of Economics in Plant Life Management License Renewal in the U.S.

12:30–14:00 **Lunch**

14:00–15:40 Sub-Session 3.2
Co-chairpersons: J.-P. Chatry, France
S. Bugaenko, Russian Federation

<i>No of Paper IAEA-CN-92/</i>	<i>Name</i>	<i>Designating Member State/ Organization</i>	<i>Title of paper</i>
26	N.M. Grusha	Belarus	Prospect of Nuclear Power Development in Belarus
27	S. Wisniewski	Germany	Power Uprating of Nuclear Power Plants — Solutions, Experience and Economical Aspects
28	S. Shiganakov	Kazakhstan	BN-350 NPP Regulatory Aspects of Decommissioning
29	T. Siri-Udomrat	Thailand	Economic Analysis of Nuclear Power Plant for Decision Making in Thailand
68	Yu.N. Kuznetsov	Russian Federation	Application of the Combined Cycle LWR-Gas Turbine to PWR for NPP Life Extension, Safety Upgrade and Improving Economy

15:40–16:00 Coffee/Tea break

16:00–18:15 SESSION 4: TECHNOLOGICAL AND OPERATIONAL ASPECTS OF PLIM

16:00–17:30 Sub-Session 4.1
Co-chairpersons: M. Ishikawa, Japan
J. Figueras, Spain

<i>No of Paper IAEA-CN-92/</i>	<i>Name</i>	<i>Designating Member State/ Organization</i>	<i>Title of paper</i>
30	O. Nevander	Finland	Overview: Overview on technological and operational aspects of PLIM in Loviisa NPP
34	M. Aubray	Canada	Plant Condition Assessments as a Requirement Before Major Investment in Life Extension for a CANDU Nuclear Power Plant
36	D. Moinereau	France	French RPV PTS Assessment: an Overview of the EDF Research & Development in Progress on Thermalhydraulics, Materials and Mechanical Aspects
50	A. Arzhaev	Russian Federation	Effective Technologies of PLIM elements application at Russian Federation NPPs

17:30–18:15 **Sub-Session 4.2**
Co-chairpersons: G. Young, USA
M. Ziakova, Slovakia

<i>No of Paper IAEA-CN-92/</i>	<i>Name</i>	<i>Designating Member State/ Organization</i>	<i>Title of paper</i>
38	A. Martin	France	CFD-Tool for Assessment of the Reactor Pressure Vessel Integrity in Pressure Thermal Shock Conditions for Lifetime Evaluation. Qualification phasis and Thermal-Hydraulic Study of a Safety Injection in a Three Loop PWR Plant.
43	T. Tsukada	Japan	Research Programs on Aging of Reactor Structural Materials at Japan Atomic Energy Research Institute

WEDNESDAY, 6 NOVEMBER 2002

08:30–15:30 **SESSION 4: TECHNOLOGICAL AND OPERATIONAL ASPECTS OF PLIM (cont'd)**

08:30–09:15 **Sub-Session 4.2 (cont'd)**
Co-chairpersons: G. Young, USA
M. Ziakova, Slovakia

<i>No of Paper IAEA-CN-92/</i>	<i>Name</i>	<i>Designating Member State/ Organization</i>	<i>Title of paper</i>
45	H.B. Park	Korea, Rep of	Aging Evaluation Methodology of Periodic Safety Review in Korea
48	G. Dundulis	Lithuania	Ageing of Austenitic Pipes in Ingalina NPP

09:15–10:40 **Sub-Session 4.3**
Co-chairpersons: M. Hoda, Pakistan
T.R. Kim, Korea, Rep. of

31	M. Miller	Argentina	New In-Core Instrumentation for Atucha I Nuclear Power Plant
33	R. Tapping	Canada	CANDU Steam Generator Aging Management: Some Perspectives after 20 Years' In-Service Experience
44	A. Koyama	Japan	Aging Countermeasures for Nuclear Power Plants in Japan and PLEC's Activities
47	S.S. Hwang	Korea, Rep of	Leak/Burst Test on SCC Degraded Steam Generator Tubings

10:40–11:00 **Coffee/Tea break**

11:00–12:30 Sub-Session 4.4
Co-chairpersons: C. Belinco, Argentina
T. Planman, Finland

<i>No of Paper IAEA-CN-92/</i>	<i>Name</i>	<i>Designating Member State/ Organization</i>	<i>Title of paper</i>
52	G. Toman	USA	NEPO Cable System Aging Management Programs
35	J. Nickerson	Canada	The Advantages of Reliability Centered Maintenance for Standby
40	M. Klein	Germany	Experience with Safety I&C Modernization in Paks Nuclear Power Plant
53	C. Crocombette	USA	Instrumentation and Control Aging Management: A Focus on Electronic Parts and Boards

12:30–14:00 Lunch

14:00–15:30 Sub-Session 4.5
Co-chairpersons: G. Bezdikian, France
P. Vidican, Romania

37	F. Champigny	France	Vessel Head Penetrations: French Approach for Maintenance in the PLIM Program
51	M.D. Gómez-Briceño	Spain	SCC of Alloy 600 Component in PWR Primary Loop
42	T. Aoki	Japan	Development of Inspection and Evaluation Guidelines for Light Water Reactor Internals
41	A. Aszody	Hungary	The Human Resource Conditions of Lifetime Extension

15:30–15:50 Coffee/Tea break

SESSION 5: CURRENT NATIONAL APPROACHES TO PLIM

15:50–17:40 Sub-Session 5.1

**Co-chairpersons: I. S. Hwang, Korea, Rep. of
P. Tipping, Switzerland**

<i>No of Paper IAEA-CN-92/</i>	<i>Name</i>	<i>Designating Member State/ Organization</i>	<i>Title of paper</i>
70	B. Gueorguiev	IAEA	Integrated NPP Life Cycle Management — Agency's Approach
54	P. Manolatos	EURATOM	Euratom Community Cosponsored Research In NPP Life Management.
55	J. Grandemange	France	Safe Ageing Management of Nuclear Power Plants: A European Synthesis
9	L. Debarberis	European Commission	An Integrated View on Plant Life Management EC-JRC-IE Projects and Programmes

THURSDAY, 7 NOVEMBER 2002

08:30–15:00 **SESSION 5: CURRENT NATIONAL APPROACHES TO PLIM (cont'd)**

08:30–11:10 **Sub-Session 5.2**

**Co-chairpersons: G. Sgarz, Germany
S. Vodenicharov, Bulgaria**

<i>No of Paper IAEA-CN-92/</i>	<i>Name</i>	<i>Designating Member State/ Organization</i>	<i>Title of paper</i>
56	J. Sipek	Czech Rep.	The Legislative Basis and the State of the Plant Life Management Programmes on Czech NPP's
57	G. Bezdikian	France	French Plant Life Management Program — RPV Integrity Assessment
58	G. Sgarz	Germany	Basic Criteria and Application: Examples of German Utility PLIM Concept
59	T.J. Katona	Hungary	Life Time Management and Life Time Extension at Paks Nuclear Power Plant
60	M. P. Sharma	India	Plant Life Extension Program for Indian PHWR Power Plants Actual Experience and Future Plans
10:10–10:30 Coffee/Tea break			
61	M. Ishikawa	Japan	Current Approaches to Nuclear Power Plant Life Management in Japan
62	I.S. Jeong	Korea, Rep. of	PLIM Programs of Korean Nuclear Power Plants

11:10–15:00 Sub-Session 5.3
Co-chairpersons: M. Brumovsky, Czech Rep.
M. P. Sharma, India

<i>No of Paper IAEA-CN-92/</i>	<i>Name</i>	<i>Designating Member State/ Organization</i>	<i>Title of paper</i>
63	M.Q. Hoda	Pakistan	Managing Ageing of Karachi Nuclear Power Plant
64	M. Cojan	Romania	Considerations Related to Plant Life Management for Cernadova - 1
65	M. Ziaková	Slovakia	Plant Life Management in the Slovak Republic
20	L. Francia	Spain	LWR Power Plants Lifetime Management Strategies, the Spanish Approach

12:30–14:00 Lunch

66	S. Hoffman	USA	License Renewal and Environmental Impacts Program
67	J. Stejskal	Switzerland	Plant Life Management (PLIM) in Swiss Nuclear Power Plants
69	F. Aparkin	Russian Federation	Plant Life Management in Russian Federationn: Nuclear Power Plants

15:00–15:20 Coffee/Tea break

**15:20–17:00 SESSION 6: PANEL ON INTEGRATED PLANT LIFE
MANAGEMENT — WHY AND HOW**

17:00 Closing Remarks

FRIDAY, 8 NOVEMBER 2002:
Technical Tour

POSTER PRESENTATIONS

Poster Session 1

11:30–15:30 Tuesday, 5 NOVEMBER 2002

<i>No of Paper IAEA-CN-92/</i>	<i>Name</i>	<i>Designating Member State/ Organization</i>	<i>Title of paper</i>
P1	C. Belinco	Argentina	Treatment of Fuel Channels Made of Zircaloy-4 from A PHWVR Power Plant
P2	J.M.L. Moreira	Brazil	Improving the Peak Power Density Estimation for the DNBR Trip Signal through a Neutral Correlation with the out-of-core detectors
P20	E.A. Barbosa	Brazil	RM-ODP to Express Nuclear Licensing
P3	B.Petrov	Bulgaria	Reactor Dosimetry in Reactor Pressure Vessels Lifetime Management
P4	L. Lazic	Canada	Motor Life Management at Gentilly 2 Nuclear Power Plant
P6	F.Gillemot	Hungary	R&D Background for Life Management in Hungary
P7	B.B. Rupani	India	Methodologies and Technologies for Life Assessment and Management of Coolant Channels of Indian Pressurized Heavy Water Reactors
P8	J.H. Kim	Korea, Rep. of	In-Situ Raman Spectroscopic Investigation of Alloy 600 in Simulated PWR Water
P9	L.C. Longoria	Mexico	Neutron Flux and Fluence Determination for BWR Reactors

Poster Session 2**11:30–15:30 Wednesday, 6 NOVEMBER 2002**

<i>No of Paper IAEA-CN-92/</i>	<i>Name</i>	<i>Designating Member State/ Organization</i>	<i>Title of paper</i>
P11	Yu.Korotkikh	Russian Federation	Modeling of the Fatigue Damage Accumulation Processes in the Material of NPP Design Units under Thermomechanical Unstationary Effects Estimation of Spent Life and Forecast of Residual Life
P12	I.F. Akbashev	Russian Federation	Improvement of Regulatory Procedures for RPV Integrity and Life Time Assessment from the Viewpoint of Brittle Failure Resistance
P13	I. Tutnov	Russian Federation	NPP Component Maintenance and Life Management in Russian Federation
P14	I. Marcelles	Spain	Risk Informed in-Service Inspection and Testing in Spain
P15	F. Reisch	Sweden	New Control Rooms in Sweden
P16	D.V. Kozlov	Russian Federation	The KORPUS Facility in Determination of Residual Life and Validation of Possible Prolongation of the VVER-1000 Vessel Operation beyond the Designed Service Life
P17	T.M.Boulanova	Russian Federation	Micro-x-ray Examination of Deposits and Pitting Corrosion of the VVER Steam Generator Heat Exchanging Tubes
P19	P. Trampus	IAEA	Technical Cooperation with Central and Eastern European Countries with Special Focus on Engineering Aspects of Lifetime Optimization

PARTICIPATION IN IAEA SCIENTIFIC MEETINGS

Governments of Member States and those organizations whose activities are relevant to the meeting subject matter are invited to designate participants for IAEA scientific conferences, symposia and seminars. In addition, the IAEA itself usually invites a very limited number of scientists as invited speakers and only participants designated or invited in this way are entitled to present papers and take part in the discussions.

Scientists interested in participating in any of the Agency's meetings should request information from the Government authorities of their own countries, in most cases their Ministry of Foreign Affairs or national atomic energy authority.

PUBLICATIONS

Proceedings

The proceedings will be published by the Agency in unedited form as soon as possible after the Symposium. All papers and papers of posters presented at the Symposium will be included together with abstracts. A copy will be sent to each participant present at the meeting as soon as possible after the Symposium.

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AGENCY PUBLICATIONS RELATING TO THE SUBJECT OF THE SYMPOSIUM

IAEA-TRS-266	Engineering and Science Education for Nuclear Power: A Guidebook	1986
IAEA-TRS-306	Guidebook on the Education and Training of Technicians for Nuclear Power	1989
IAEA-TRS-315	Quality Management for Nuclear Power Plant Operation: A Manual	1990
IAEA-TRS-317	Implementation of Quality Assurance Corrective Actions: A Manual	1990
SRS No. 50-SG-O1 (Rev. 1)	Staffing of Nuclear Power Plants and the Recruitment, Training and Authorization of Operating Personnel: A Safety Guide	1991
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IAEA-TECDOC-1057	Experience in the Use of Systematic Approach to Training (SAT) for Nuclear Power Personnel	1998
IAEA-TECDOC-1058	Good Practices with Respect to the Development and Use of Nuclear Power Plant Procedures	1998

IAEA-TECDOC-1052	Nuclear Power Plant Organization and Staffing for Improved Performance: Lessons Learned	1998	IAEA-TECDOC-1230	Reference Manual on the IAEA JRQ Correlation Monitor Steel for Irradiation Damage Studies	2001
SRS No. 6	Safety Issues for Advanced Protection, Control and Human-Machine Interface Systems in Operating Nuclear Power Plants. (Prepared jointly with NSNI).	1998	IAEA-TECDOC-1252	Integrated Information Presentation in Control Rooms and Technical Offices	2001
IAEA-TRS-387	Modern Instrumentation and Control for Nuclear Power Plants	1999	IAEA-TECDOC-1259	Nuclear Power Programme Planning: An integrated Approach	2001
IAEA-TRS-384	Verification and Validation of Software Related to Nuclear Power Plant Instrumentation and Control	1999	STI/PUB/1121	Operating Experience with Nuclear Power Stations in Member States in 2000	2001
STI/PUB/1087	Operating Experience with Nuclear Power Stations in Member States in 1998	1999	RDS-2/22	Nuclear Power Reactors in the World (April 2001 edition)	2002
SRS No. 15	Implementation and Review of a Nuclear Power Plant Ageing Management Programme	1999	IAEA-TRS-406	Developing an Economic System to Enhance Nuclear Power 2002 Plant Competitiveness	
IAEA-TECDOC-1147	Management of Ageing of I&C Equipment in NPPs.	2000			
IAEA-TRS-397	Quality Assurance for Software Important to Safety	2000			
IAEA-TRS-396	Economic Evaluation of Bids for Nuclear Power Plants, 1999 Edition	2000			
STI/PUB/1121	Operating Experience with Nuclear Power Stations in Member States in 1999	2001			
IAEA-TECDOC-1204	Systematic Approach to Human Performance Improvement in Nuclear Power Plants: Training Solutions	2001			
IAEA-TECDOC-1209	Risk Management: A Tool for Improving Nuclear Power Plant Performance	2001			
IAEA-TECDOC-1226	Managing Change in Nuclear Utilities	2001			

SCIENTIFIC MEETINGS SCHEDULED BY THE IAEA:

2002

International Symposium on Standards and Codes of Practice in Medical Radiation Dosimetry
25–28 November, Vienna, Austria

International Conference on Safety Culture in Nuclear Installations
2–6 December, Rio de Janeiro, Brazil

International Conference on Issues and Trends in Radioactive Waste Management
9–13 December, Vienna, Austria

2003

International Symposium on Isotope Hydrology & Integrated Water Resources Management
19–23 May, Vienna, Austria

International Conference on Storage of Spent Fuel from Power Reactors
2–6 June, Vienna, Austria

International Conference on Nuclear Analytical Techniques for Health and Environment
10–13 June, Vienna, Austria

International Conference on Innovative Technologies for Nuclear Fuel Cycles and Nuclear Power
23–26 June, Vienna, Austria

International Conference on the Safety of Transport of Radioactive Material
7–11 July, Vienna, Austria

International Symposium on Seismic Evaluation of Existing Nuclear Facilities
25–29 August, Vienna, Austria

International Conference on National Infrastructures for Radiation Safety
8–12 September, Rabat, Morocco

Scientific Forum
16–17 September, Vienna, Austria

International Symposium on Applications of Gene-based Technologies for Improving Animal Production and Health in Developing Countries
6–10 October, Vienna, Austria

International Conference on the Protection of the Environment from the Effects of Ionizing Radiation
6–10 October, Stockholm, Sweden

International Symposium on Electricity and the Environment: What have we learned since Helsinki 1991?
October/November, Republic of Korea

International Conference on Research Reactor (Utilization, Safety, Decommissioning, Fuel and Waste Management)
10–14 November, Santiago, Chile

International Conference on Advances in Information Analysis and its Applications
1–5 December, Vienna, Austria

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