

CONTENTS

1.	INTRODUCTION	1
2.	TRANSFORMATIONS CAUSING UTILITIES TO OPTIMIZE O&M COSTS	2
2.1.	Transformations in the electricity supply industry	2
2.2.	Changing priorities in investment appraisal	3
2.3.	Changes in plant ownership	5
2.4.	Influence of a new business environment on plant decisions	5
2.5.	Potential for performance improvement	7
3.	APPLICABILITY OF A NUCLEAR ECONOMIC PERFORMANCE INTERNATIONAL SYSTEM	8
3.1.	Plant benchmarking	9
3.2.	Nuclear power plant performance optimization	10
3.3.	Staff awareness	11
3.4.	Management culture	12
3.5.	Plant life management	12
3.6.	New plant design	12
3.7.	Nuclear power plant planning studies	13
4.	ESTABLISHING THE NUCLEAR ECONOMIC PERFORMANCE INTERNATIONAL SYSTEM (NEPIS)	13
4.1.	Issues to be addressed in designing NEPIS	13
4.2.	Setting up NEPIS	15
4.2.1.	Standardizing the cost basis	15
4.2.2.	The cost accounting method	16
4.2.3.	Compatibility with existing databases	17
4.2.4.	Adjusting for technological differences	17
4.2.5.	Terms of access and confidentiality	18
4.2.6.	Data collection, updates timing and validation process	18
4.2.7.	Database structure	19
4.2.8.	Database administration	19
4.2.9.	Data distribution	20
4.3.	Implementation of NEPIS	20
4.3.1.	Pilot project	20

4.3.2. International data collection	20
4.3.3. Future considerations	21
4.3.3.1. Development of economic performance indicators	21
4.3.3.2. Benchmarking	21
4.3.3.3. Communicating best practice	22
4.3.3.4. Decommissioning costs	22
4.3.3.5. Economic lifetime, refurbishments and safety upgrade assessments	22
4.3.3.6. Other issues	23
4.4. Preliminary results of the pilot project	23
 5. CONCLUSIONS	 29
 REFERENCES	 30
 ANNEX I: USING FRONTIER ANALYSIS TO OPTIMIZE COSTS AND PERFORMANCE	 31
 ANNEX II: MONETARY CONVERSION TABLES	 35
II-1. GDP deflators	35
11-2. PPP indices	35
References to Annex II	41
 ANNEX III: DEFINITIONS AND TERMINOLOGY FOR NEPIS	 42
III-1. Objective	42
111-2. General instructions	42
111-3. Data quality assurance	43
111-4. General plant and unit data	44
111-4.1. General	44
111-4.2. Plant specifications: A1000 to A1415	44
III-4.3] Unit specifications: A1600 to A2015	46
111-5. O&M cost definitions	50
111-5.1. Overview	50
111-5.2. Resource definitions	51
111-5.3. Account definitions: 1099 to 3004	51
111-5.4. Operations costs	52
111-5.5. Maintenance costs	52
111-5.6. Support services	54
111-5.7. Plant administration	60
111-5.8. Direct and indirect costs',	63

	III-6. Refuelling/overhaul outage cost definitions	65
	111-6.1. Overview	65
ANNEX IV:	GLOSSARY OF BUSINESS TERMS	67
ANNEX VI	IAEA POWER REACTOR INFORMATION SYSTEM DEFINITIONS	78
	CONTRIBUTORS TO DRAFTING AND REVIEW	81