

# WORKING MATERIAL

## **Publications and Studies using the IAEA Software Desalination Economic Evaluation Program (DEEP)**

### **Volume II (2001)**

A COMPILATION OF PAPERS, PUBLICATIONS AND STUDIES THAT  
REPORT ECONOMIC RESULTS ON NUCLEAR SEAWATER  
DESALINATION GENERATED WITH THE IAEA SOFTWARE  
DESALINATION ECONOMIC EVALUATION PROGRAM (DEEP)

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## FOREWORD

This Working Material is a reproduction of Papers, Publications and Studies that report Economic Results on Nuclear Seawater Desalination generated using the IAEA software Desalination Economic Evaluation Program (DEEP). It contains both studies performed by the Agency and studies that were performed externally and were submitted to the IAEA for the purpose of being included in this Working Material (WM).

1. Volume I of this WM Series contains studies submitted by January 2000.
2. Volume II of this WM Series (the present volume) contains studies submitted by September 2001.

DEEP (formerly named “Cogeneration and Desalination Economic Evaluation” Spreadsheet, CDEE) has been developed originally by General Atomics under contract, and has been used in several studies published by the Agency. After validation of the software in March 1998 a user-friendly version has been issued under the name of DEEP 1.0 end of 1998. DEEP 2.0 was then issued as a CD-ROM version in 2000.

DEEP output includes the levelized cost of water and power, a breakdown of cost components, energy consumption and net saleable power for each selected option. Specific power plants can be modelled by adjustment of input data including design power, power cycle parameters and costs. DEEP serves three objectives:

- Calculation of the levelized cost of electricity and desalted water as a function of quantity, site specific parameters, energy source and desalination technology.
- It enables side-by-side comparison of a large number of design alternatives on a consistent basis with common assumptions.
- It enables quick identification of the lowest cost options for providing specified quantities of desalted water and/or power at a given location.

Until September 2001, DEEP has been distributed to some 95 users in 30 Member States of the IAEA. Both the software DEEP and the corresponding Manual are available upon request from the Agency<sup>1</sup>. In order to use the software, a license agreement with the Agency needs to be established; a sample agreement is included at the end of this Working Material.

All papers are reprinted without any editing or revision by the Agency. Their inclusion does not allow to conclude that the results obtained are in line with studies and Technical Documents published by the Agency.

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<sup>1</sup> Please contact Mr. Peter J. Gowin, Nuclear Power Technology Development Section, IAEA, phone +43 1 2600-22811 or at P.Gowin@iaea.org, regarding both the software and the compilation of Vol. II of this Working Material.

Institutions and individuals that wish to report additional papers, studies and reports using DEEP and who wish them to be included in a Working Material are kindly invited to contact the Agency; it is intended to continue this series of Working Materials upon reception of a sufficient number of studies with Volume III.

## CONTENTS

1. International Atomic Energy Agency, Excerpt from: Options Identification Programme for Demonstration of Nuclear Desalination, IAEA-TECDOC-898, Vienna, August 1996
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21. Sample Agreement for use of DEEP Software (for reference only)