

**PACKAGE ID** - 001091IBMPC00 LPGC

**KWIC TITLE** - Levelized Power Generation Cost Codes

**AUTHORS** - Coen, J.J.  
Oak Ridge National Lab, TN (United States)

Delene, J.G.  
Oak Ridge National Lab, TN (United States)

**LIMITATION CODE** -UNL                   **AUDIENCE CODE** - UNL

**COMPLETION DATE** - 03/01/1989   **PUBLICATION DATE** - 01/01/1989

**DESCRIPTION** - LPGC is a set of nine microcomputer programs for estimating power generation costs for large steam-electric power plants. These programs permit rapid evaluation using various sets of economic and technical ground rules. The levelized power generation costs calculated may be used to compare the relative economics of nuclear and coal-fired plants based on life-cycle costs. Cost calculations include capital investment cost, operation and maintenance cost, fuel cycle cost, decommissioning cost, and total levelized power generation cost. These programs can be used for quick analyses of power generation costs using alternative economic parameters, such as interest rate, escalation rate, inflation rate, plant lead times, capacity factor, fuel prices, etc. The two major types of electric generating plants considered are pressurized water reactor (PWR) and pulverized coal-fired plants. Data are also provided for the Large Scale Prototype Breeder (LSPB) type liquid metal reactor.

**PACKAGE CONTENTS** - Media Directory; Software Abstract; ORNL-TM-10997; Media Includes Source Code, Executable Sample Problems, Run Time Library;

**SOURCE CODE INCLUDED?** - Yes

**MEDIA QUANTITY** - 2 5.25 Diskettes

**METHOD OF SOLUTION** - LPGC consists of nine individual menu driven programs controlled by a program driver, MAINPWR. The individual programs are PLANTCAP, for calculating capital investment costs; NUCLOM, for determining operation and maintenance (O&M) costs for nuclear plants; COALOM, for computing O&M costs for coal-fired plants; NFUEL, for calculating levelized fuel costs for nuclear plants; COALCOST, for determining levelized fuel costs for coal-fired plants; FCRATE, for computing the fixed charge rate on the capital investment; LEVEL, for calculating levelized power generation costs; CAPITAL, for determining capitalized cost from overnight cost; and MASSGEN, for generating, deleting, or changing fuel cycle mass balance data for use with NFUEL. LPGC has three main modes of operation. In the first, each individual code can be executed independently to determine one aspect of the total

**PACKAGE ID** - 001091IBMPC00 LPGC

**METHOD OF SOLUTION - (CONT)** levelized power cost, such as fuel or O&M cost. In the second, the integrated code can be run to calculate all aspects of the levelized power cost, and in the third, the integrated code can be used to access an individual code which calculates one aspect of the levelized power generation cost as in the first mode of operation.

**COMPUTER** - IBM PC

**OPERATING SYSTEMS** - MS-DOS 2.1 or higher

**PROGRAMMING LANGUAGES** - BASIC

**SOURCE CODE AVAILABLE (Y/N)** - Y

**RELATED SOFTWARE** - The individual programs in LPGC have their origins in several mainframe programs. The capital investment cost procedures are modeled after those in CONCEPT5 and the operation and maintenance after those in OMCOST. The nuclear fuel cycle cost procedures are based on those in the REFCO code; the levelization procedures are based on those described in the 1987 Nuclear Energy Cost Data Base.

**OTHER PROG/OPER SYS INFO** - A BASIC interpreter, either BASICA or GWBASIC is required to compile the codes. A set of copyrighted Microsoft run-time libraries is included with the package. Compiled versions of the source, created with Microsoft QuickBasic 4.0, are also included.

**HARDWARE REQS** - A minimum of 64 kbytes of RAM is required along with one flexible disk drive.

**REFERENCES** - J.J. Coen and J.G. Delene, User Instructions for Levelized Power Generation Cost Codes Using an IBM-Type PC, ORNL/TM-10997, January 1989.

**ABSTRACT STATUS** - Released AS-IS 5/2/96.

**SUBJECT CLASS CODE** - M

**KEYWORDS** -

COMPUTER PROGRAM DOCUMENTATION  
L CODES  
POWER GENERATION  
PERSONAL COMPUTERS  
FOSSIL-FUEL POWER PLANTS  
NUCLEAR POWER PLANTS  
PWR TYPE REACTORS  
LMFBR TYPE REACTORS  
COAL  
CAPITALIZED COST

E S T S C  
ENERGY SCIENCE & TECHNOLOGY SOFTWARE CENTER  
SOFTWARE ABSTRACT

PAGE 3  
DATE 03/11/2002

**PACKAGE ID** - 001091IBMPC00 LPGC

OPERATING COST

**EDB SUBJECT CATEGORIES** -  
990200

**SPONSOR** - DOE/ER

**PACKAGE TYPE** - AS - IS