

030-11333



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O'BRIEN & ASSOCIATES, INC.
CONSULTING ENGINEERS

SOIL STUDIES
INSPECTION
TESTING
ENGINEERING

P.O. BOX 1231 - ARLINGTON HEIGHTS, ILLINOIS 60006 - (312) 398-1441

November 12, 1981

U. S. Nuclear Regulatory Commission
Region III
799 Roosevelt Rd.
Glen Ellyn, IL. 60137

Re: License Ammendment for License 12-16553-01

Gentlemen:

We have recently purchased a Seaman C75 BP and would like to have an ammendment to our license to include this additional source so that we may take possession of this testing meter. Please find enclosed a copy of the meter specifications for your reference and a check for the required \$40.00 fee for processing.

If there is any additional information required, please do not hesitate to contact us.

Very truly yours,

O'BRIEN & ASSOCIATES, INC.

Vernon P. Brown
Vernon P. Brown
Radiation Protection Officer

VPB/j
Enc.

Applicant.....	
Check No.....	1914 #40/3L
Amount, Fee Category	
Type of Fee	
Date of Check	
Received By.....	

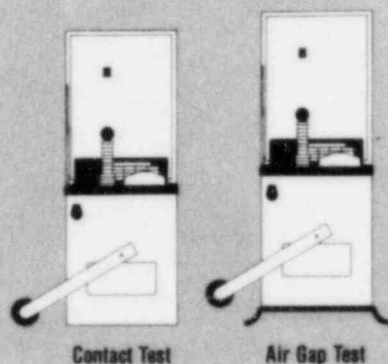
RECEIVED BY LFMB	
Date.....	11/25/81
By.....	Don. R. B. Reg III
File To.....	
Action Comp.....	11/27/81

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REG3 LIC30
12-16553-01 PDR

CONTROL NO. 05620

NOV 16 1981

THE EXCLUSIVE TEST THAT ELIMINATES HOLE PUNCHING AND ERRONEOUS CHEMICAL EFFECTS



The C-75BP employs Seaman's unique "optimum air-gap" technology to test density and moisture more accurately in a completely nondestructive test. Since the source never leaves the meter, there are no holes to punch or drill in the soil or pavement. The base material is left undisturbed. This exclusive Seaman technology not only results in more accurate testing, but also safer and faster testing.

HERE'S HOW IT WORKS.

The meter is placed in contact with the soil or pavement and a test is taken. Then the air gap stand is placed under the meter and a second test is made. The meter holds both tests in its memory and automatically makes a calculation that eliminates the chemical effect of the soil or base material to make a true density determination. Then when the appropriate buttons are pressed (see keyboard illustration) the meter will display wet or dry density in PCF, and moisture as a percent of dry weight or density as a percent of lab density previously entered in meter's memory, in either metric, U.S. standard units, or specific gravity.

MORE TESTS PER DAY AT A LOWER LABOR COST PER TEST

The C-75BP is engineered for faster, more accurate testing of density and moisture. The meter was specifically designed for asphalt and soils work and utilizes many labor-saving principles. It requires a minimum of surface preparation and completely eliminates hole punching and disturbance of test material. Because of this it is 7 to 10 times faster than direct transmission meters and is particularly well-suited to running density growth curves behind rollers. Any test time from 1 to 9999 seconds may be selected. Examples: 15 seconds for density growth curves; 60 seconds for ASTM standards.

FIRST IN OPERATOR SAFETY

The C-75BP is designed with operator safety as a first consideration. The source never leaves the meter during testing or transporting and is automatically shielded when the meter is carried, closed or locked. The Cesium/Americium/Beryllium source is very stable and reliable through a full range of densities and moisture. For safety it is double-encapsulated and lead-shielded within the housing. The meter is approved by the NRC. Optional radium source does not require NRC licensing and is approved by the HEW Bureau of Radiological Health.

EASY TO USE—AUTOMATIC ERROR DETECTION

The C-75BP has a built-in brain and memory that virtually eliminates the need for special operator skills. No charts or tables are required, nor is it necessary for the operator to interpret data. The keyboard is used for all tests. The operator doesn't need a calculator or slide-rule. The large LCD not only shows test results but also flags operator errors, low battery conditions, and verifies that the meter is working properly and that the memory is intact.

The meter is factory-calibrated for all materials and with it the operator does not have to perform field calibrations or make bias adjustments. No adjustments are needed for changes in asphalt content, chemical composition or gradation.

GREATER ACCURACY

Many features combine to make the C-75BP a highly accurate test instrument. The optimum air gap method of testing eliminates chemical influence of the test area and leaves the sample undisturbed. Because of the large sample size (up to one cubic foot) there is less chance of random error and better correlation with lab densities and conventional testing methods.

OPTIONS:

"Accudepth"—A program for measuring densities of top lifts and thin overlays without influence of underlying base materials. Test depth can be controlled in increments as small as 1/8" from 1/4" thickness and up.

"Untouchable"—Separate program for noncontact density/moisture calculation. Use on rough surfaces and on open-graded asphalt.

Temperature Probe—identifies actual ambient or asphalt temperature at desired depth. Reads 32°F to 400°F or 0°C to 205°C on LCD.

Frame—Aluminum frame with styrofoam base float for plastic (wet) concrete density/moisture measurement (Requires "Untouchable" option).

Battery—Extra 6 volt rechargeable battery.

Case—Permanent molded polyethylene shipping container in lieu of standard.

Cart—Two wheel collapsible mobile cart for on-site transportation in control strip testing.

E.S.P.—Extended service policy with full maintenance, annual calibration and electronic updating.

Radium source—Eliminates NRC license requirement.

Direct transmission system

SPECIFICATIONS:

Description—Seaman Nuclear "Analyzer" direct readout Density/Moisture Meter for soil, asphalt, and concrete. Complete with microprocessor computer analyzer with touchbutton control in U.S. or metric of bulk density and moisture, percent of moisture, percent of lab density, bulk or dry, and programmable time of test entry. Built-in air gap ratio system. Internally preprogrammed calibration of all soils, asphalt and concrete. Approved shielding. Easily removable 6 volt battery with charging system, cable and wall outlet plug. Source license required. Test stand and surface preparation plate included. With one year total maintenance and electronic updating.

Approval—Meets ASTM nuclear density/moisture testing specifications D2922-78, D2950-80T, and D3017-78. Approved and registered by the U.S. Nuclear Regulatory Commission or the Department of Health, Education, and Welfare, Bureau of Radiological Health.

Density Range—80-170 PCF, 1282-2783 KG/M³

Moisture Range—0-45 PCF, 0-721 KG/M³

Test Sample—Up to one cubic foot.

Computer—Built-in microprocessor. All calibration data stored in memory.

Test Mode—Contact—Full Depth

Data—U.S., Metric or Specific Gravity. Test time variable from 1 second to 9999 seconds. Lab density entry. Variable moisture standard count (trench compaction testing) entry. Air gap, density, moisture counts per minute, bulk and dry density, bulk moisture, displays in PCF or KG/M³. Percent lab density and percent moisture display.

Display—LCD—easily read in sunlight. Four numeric, two symbolic digits.

Sealed Source—8 mci Cesium 137, 40 mci Americium 241 Beryllium, double encapsulated. Optional 4.5 mci Radium 226 Beryllium.

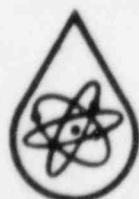
Shield—Lead and polyethylene. In approved shipping container meets Class II Yellow Label D.O.T. Title 49 and CAB 82-60 requirements.

Battery—Rechargeable, 80 hour operation. Charger provided.

Weight—30 pounds.

Standard Accessories—Reusable cardboard shipping container. Moisture and density calibration test stand. Surface preparation leveling plate. Lock and keys.

Warranty—Full year on parts and service.



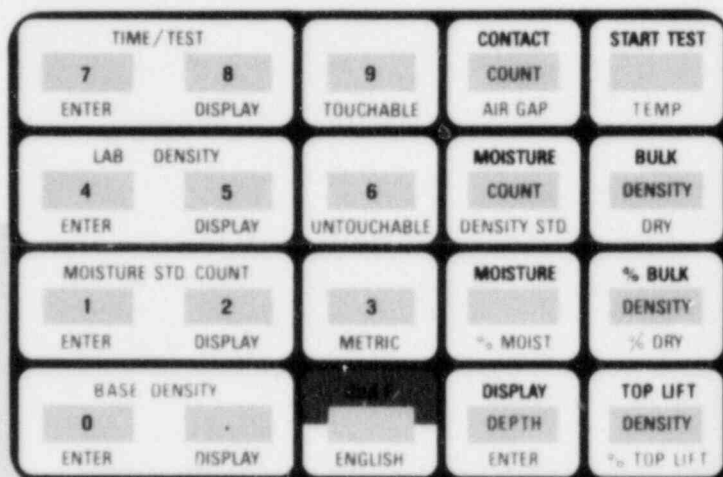
The
SEAMAN NUCLEAR CORPORATION
7315 S. First Street, Oak Creek, WI 53154
Telephone 414/762-5100

Distributed By:

...NOW...

the full-featured C-75BP

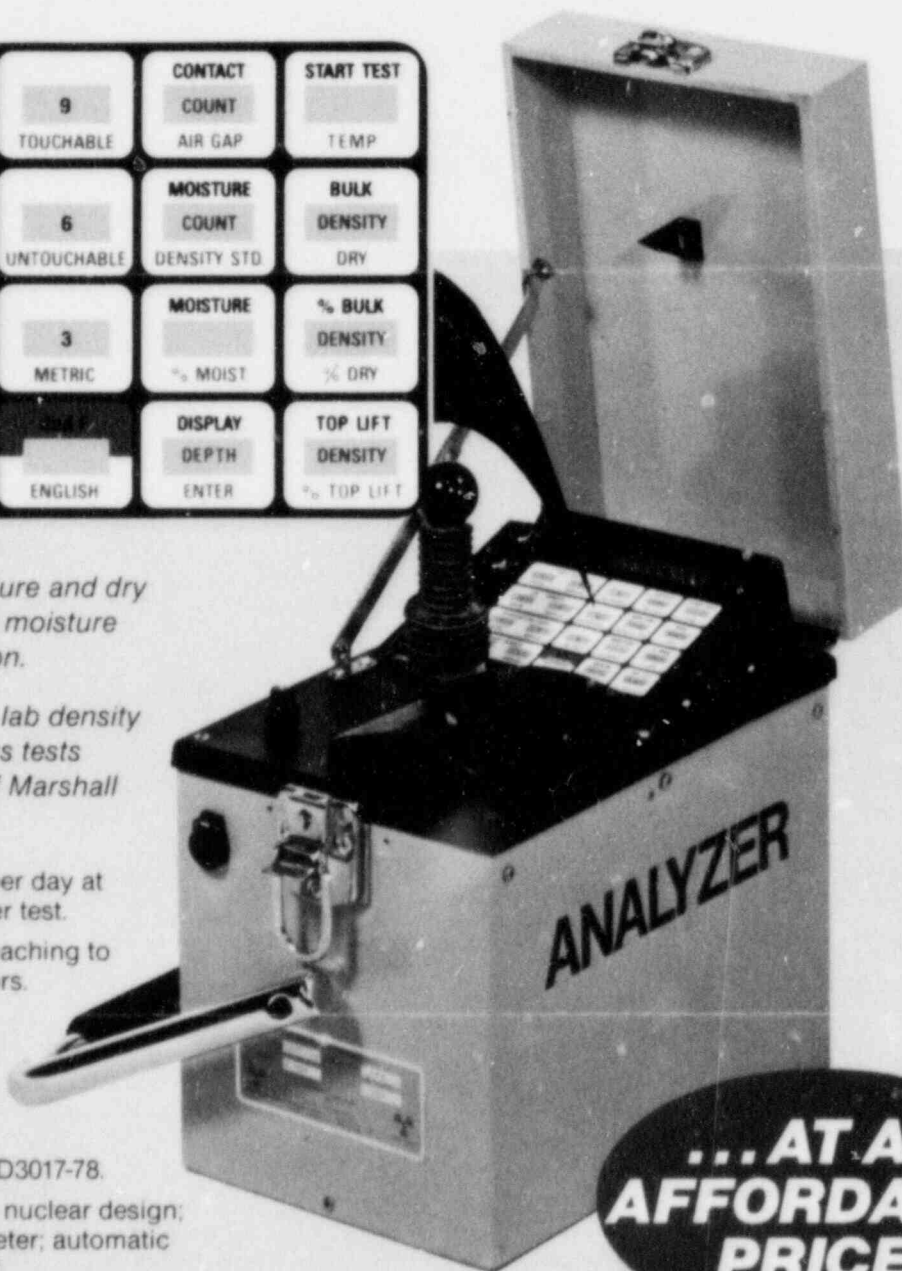
DENSITY/MOISTURE METER



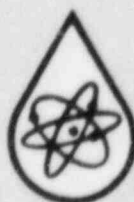
Displays density, moisture and dry weight in PCF, percent moisture and percent compaction.

Microprocessor stores lab density in memory and displays tests directly as a percent of Marshall or Proctor.

- **FASTER**—more tests per day at minimum labor cost per test.
- **EASY TO USE**—self-teaching to eliminate operator errors.
- **ACCURATE**—correlates closely with lab densities; meets established ASTM standards: D2922-78, D2950-80T, D3017-78.
- **SAFE**—safest possible nuclear design; source never leaves meter; automatic shielding when carried.
- **FACTORY-SET DENSITY CALIBRATION**—applies to all soils, asphalt and concrete. No field adjustment to finagle.
- **AFFORDABLE**—a fast, full-featured automatic analyzing meter at the price of laborious "economy" equipment.



**...AT AN
AFFORDABLE
PRICE!**



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