



**NUCLEAR INSPECTION & ACCEPTANCE PROCEDURES
COMPACTION OF EARTHWORK WITH MOISTURE & DENSITY**

GENERAL

On selected grading projects, as designated by the engineer, acceptance testing will be performed on each compaction section of each lift as soon as practicable after the contractor notifies the inspector that the section is ready for testing. A compaction section is defined as the lineal length of a lift of relatively uniform soil being placed, which received continuous compaction until density is achieved.

NUCLEAR MOISTURE & DENSITY TESTING

Each section shall be divided into approximately five equal subsections. A random spot in each subsection shall be selected for a nuclear moisture and density test in accordance with [IM 334](#) as modified by this instruction, and the recorded steps on Form #1258. Correction factors for nuclear moisture measurements shall be established or verified in accordance with [IM 334](#).

ACCEPTANCE OF COMPACTION SECTION

If all the subsection test results are at or above the specified density, the section is acceptable. If any of the subsection test results are less than the specified density, the following procedures shall be used for determining acceptability:

Add the five density test results and divide by five to get the average (X) density.

Determine the range (R) of test results by subtracting the lowest value from the highest value.

Determine the percent of compliance with the specified target density by use of Chart A or B (attached). Each chart has an illustrative example.

A section is considered to be in reasonable conformance when the percent of compliance with the specified target density is 80% or greater. Sections with less than 80% compliance shall continue to be compacted or reworked, or both, until 80% is achieved.

The same procedures outlined for the initial testing shall be followed in detail when retesting is required.

The frequency of testing may be reduced from five tests to one test for determining acceptability of compaction on irregular or short sections, such as beams, short road intersections, etc., which are 500 feet (150 meters) or less in length.



