RADIATION SAFETY RADIOGRAPHER
COURSE DESCRIPTION

1. **INTENDED AUDIENCE** - Who should attend this course and why?

   This training course is intended for individuals preparing for certification and other individuals interested in an understanding of the basic principles and applications of industrial Radiography Safety for Radiographers. This course provides initial training as recommended in 10 CFR Part 34 and SC Rules and Regulations 61-63 Title B

2. **LEARNING OUTCOMES** - What will the learner gain from this educational experience? How was the need for these learning outcomes assessed?

   Students of this course provide an understanding of the basic principles and fundamentals of industrial radiography radiation safety. Learning outcomes are assessed using results of written quizzes at the end of each topic, progress tests at the end of each day, and a final written examination.

3. **INSTRUCTOR** - Briefly describe the qualifications of the instructor who will actually teach the course.

   William C. Plumstead began as a field technician in radiography in 1963. A registered professional engineer with an MBA degree, technical training includes various company training programs, Temple University NDT Engineering (3 semesters) and ASNT sponsored training. Plumstead has been approved and served as Radiation Safety Officer NRC (Nuclear Regulatory Commission) and the states of South Carolina, North Carolina, Florida, Georgia, Texas, is registered as a Radiation Consultant by the State of South Carolina. Instructed, trained, qualified and certified Radiographer and Assistant Radiographer personnel for more than 30 years.

4. **COURSE AND METHODS** - Provide an outline of course content (see example, page 5) describing the subject matter that will be covered. Include instructional methods that will involve the student in the learning process.

   Part 1 INTRODUCTION

   Brief description of natural background radiation and effects.

   Part 2 PRINCIPLES

   Review the nature of penetrating radiation, electromagnetic waves, electrical theory of matter, fundamentals of radiation physics and sources of radiation.

   Part 3 EQUIPMENT AND MATERIALS

   Covers X-ray and gamma ray sources, equipment, monitoring and detection equipment and their functions.

   Part 4 CONTROLLING RADIATION EXPOSURE

   Review of the three basic methods of controlling exposure -- time, distance, and shielding. Federal, state and local regulations and ALARA principles.

Part 5 BIOLOGICAL EFFECTS

Review somatic and genetic effects of prompt radiation exposure and long term exposure.

Part 6

Regulatory requirements for monitoring exposures, posting radiation areas.

Part 7

Emergency and Operating procedures.

5. **DEMONSTRATION OF LEARNING**: Briefly describe the specific attendance and performance requirements for each participant in the course and how they will demonstrate that they have attained the learning outcomes (e.g. written or oral examination, classroom participation, demonstration, projects, etc.)

Successful completion of training requires that no more than one class session may be missed which shall be made-up by completing assigned self-study and successful completion of a quiz with a grade of at least 80%.

Additionally, each student must achieve at least 75% correct answers on a final (general) examination of at least 40 multiple choice question.

Successful completion requirements are published in course publicity materials and described during the introduction at the beginning of each course of training.

6. **FACILITIES**:

Training will be provided in an environmentally controlled comfortable classroom using audio-visual facilities, e.g. Power point presentation and marker board.