DEPARTMENT OF ENERGY	LESSON PLAN
Course Material	Topic: Administrative Policies and Procedures

Objectives:

Upon completion of this training, the student will be able to:

1. Identify the radiological controlled areas a person should be allowed to enter after successfully completing General Employee Radiological Training, Radiological Worker I training, and Radiological Worker II training.

2. List five actions used to increase the awareness level of workers relating to proper radiological work practices.

3. Identify three conditions when a "Stop Radiological Work" should be initiated.

4. Identify the actions that should be performed, prior to recommencement of work, after a "Stop Radiological Work" order has been initiated.

5. Identify when termination bioassay monitoring should be conducted.

Training Aids:

Overhead Transparencies (OTs): OT 3.1 - OT 3.12 (May be supplemented or substituted with updated or site-specific information)

Handout

Equipment Needs:

Overhead projector/Screen

Flip chart/Markers

Masking tape

Student Materials:

Student's Guide

DEPARTMENT OF ENERGY	LESSON PLAN
Course Material	Topic: Administrative Policies and Procedures

References:
 	
   U.S. Department of Energy, Order 5480.20A, *Personnel Selection, Qualification, and Training Requirements for DOE Nuclear Facilities,* 1994.
 	
   U.S. Department of Energy, 10 CFR Part 835, *Occupational Radiation Protection*, 1998.
 	
   U.S. Department of Energy, *Radiological Control*, DOE-STD-1098-99, July 1999.
 	
   U.S. Department of Energy, Radiological Control Technical Position, *Questions and Answers Concerning Acceptable Approaches to Implementing Bioassay Program Requirements*, DOE RCTP 01-01, 2001.
 	
   Lau & Shani, *Behavior in Organization*, 1992.	

I. Introduction

Introduce module.

Show OT 3.1 and OT 3.2.

State objectives.

II. A. The RadCon Standard (DOE-STD-1098-99) is a guidance document that describes DOE's policy and expectations for an excellent radiological control program, including radiation safety training for general employees, radiological workers and Radiological Control Technicians (RCTs).

Show OT 3.3.

Radiological safety training

General Employee Radiological Training

Personnel who may routinely enter controlled areas unescorted or receive occupational exposure during access to controlled areas should receive General Employee Radiological Training (GERT). GERT is generally recommended for all employees.

Obj. 1
Identify the radiological controlled areas a person should be allowed to enter after successfully completing General Employee Radiological Training, Radiological Worker I training, and Radiological Worker II training.

Radiological Worker I and II

- Workers whose job assignments require access to radiological buffer areas and radiation areas should complete Radiological Worker I training.

- Workers whose job assignments involve entry to the following areas should complete Radiological Worker II training:
    - Radiological buffer areas
    - Radiation areas
    - High and very high radiation areas
    - Contamination and high contamination areas
    - Soil contamination areas
    - Airborne radioactivity areas

- Radiological Worker I training is not a prerequisite for Radiological Worker II training.

- The following apply to specialized radiological worker training:
    - Completed for nonroutine operations or work in areas with changing radiological conditions
    - Taken in addition to Radiological Worker II training
    - Recommended for personnel planning, preparing, and performing jobs that have the potential for high radiological consequences

- RCTs – Chapter 6 of the Radiological Control Standard provides guidance on training of RCTs.

B. Radiological Controls Program

   Line managers who manage, supervise or provide oversight of a Radiological Controls Program should receive training that is helpful in dealing with workers who have anxiety about radiation. This training should include the following:

- Guidance on handling such personnel interactions

- Emphasis on being factual

- Fundamentals of communicating risks

Review:
"Radiological Control Training Guidelines" (RadCon Standard, Table 3-1, page 3-15)

Insert site-specific information.

Show OT 3.4.

- Importance of keeping management informed

C. Radiological operations

Conduct radiological operations in a manner that controls the spread of radioactive materials, reduces exposure of the work force and the general public, and utilizes a process that seeks exposure levels that are as low as reasonably achievable.

.

Responsibilities

1. Supervisors should ensure that orientation, training, and indoctrination reinforce rules and guidelines for each worker to minimize radiation exposure and control radioactivity.

2. Prevention of the spread of radioactivity is less costly than remediation. Management should be willing to accept changes that will improve radiological control and should foster this mindset throughout the organization.

3. Supervisors and managers should encourage the work force to identify radiological control deficiencies and concerns. Prompt action should be taken to address and eliminate identified issues and prevent recurrence.

4. In cases where the work force does not have the required level of sensitivity for radiological work practices, additional management attention is needed to ensure the proper outcome. Actions should include the following:

- More direct line supervision

- Curtailment of work schedules

- Deferral of work

Obj. 2
List five actions used to increase the awareness level of workers relating to proper radiological work practices.

- Addition of extra radiological control personnel

- Conduct of additional training

5. As part of their normal work review, work supervisors should periodically review ongoing jobs to ensure prescribed radiological controls are being implemented and periodically monitor those work areas.

6. Identify conditions that could lead to or promote the spread of contamination, or unsafe work and ensure corrections are implemented on a priority basis

| | Insert site-specific information. |

7. "Stop Radiological Work" authority

- "Stop Radiological Work" authority may be initiated for the following reasons:
  – Radiological controls are inadequate.
  – Radiological controls not being implemented.
  – Radiological control hold points not being satisfied.
  – Job scope changed.
  – Area conditions changed.

- Once stopped, work should not be resumed until proper radiological controls have been established.

- Resumption of radiological work should have the approval of the manager responsible for the work and the Radiological Control Manager.

Show OT 3.7.

Reference RadCon Standard Article 345

Obj. 3
Identify three conditions when a "Stop Radiological Work" should be initiated.

Insert site-specific information.

Obj. 4
Identify the actions that should be performed, prior to recommencement of work, after a "Stop Radiological Work" order has been initiated.

Show OT 3.8.

D. Radiological measurements

Ensure radiological measurements, analyses, worker monitoring results, and estimates of public exposure are accurately and appropriately made and documented.

1. Personnel radiological records include the following:

   - Records of doses received by individuals monitored

   - Records containing information to identify individuals

   - External dose records shall include the following:
     – Applicable extremity, skin, eye, and whole body dose results
     – Evaluations resulting from anomalous dose results
     – Dose reconstruction
     – Evaluation of nonuniform doses

   - Internal dose records shall include the following:
     – Applicable whole body and lung counting results
     – Applicable bioassay results
     – Dose assessment

   - Records of dose equivalent to any organ

   - Total effective dose equivalent on annual bases

   - Dose equivalent to embryo/fetus of declared pregnant worker

   - Lifetime occupational dose, including cumulative total

   - Documented counseling of persons about radiological concerns

   - Records for authorization to exceed administrative control levels

Review:
"Personnel Radiological Records"
(RadCon Standard, page 7-5)

- Emergency dose (shall be accounted for separately, but maintained with individual's record)

- Records of dose to skin caused by contamination

- Radiological incidents

- Radiological safety concerns, formally investigated

- Records of formal written declaration of pregnancy

2. Internal monitoring

- Baseline bioassay monitoring of personnel who are likely to receive intakes resulting in a committed effective dose equivalent of 100 mrem or more shall be conducted. This must be done before beginning any work that may expose them to internal radiation exposure.

- Management should require termination bioassay monitoring when a person who participated in the bioassay program terminates employment or concludes work that involves the potential for internal exposure.

- Bioassay analyses (routine bioassay) are performed at site specified frequencies following certain work activities

- Bioassay analyses (special bioassay) should be performed when any of the following occur:
  – Facial or nasal contamination is detected that indicates the potential for internal contamination.
  – Airborne monitoring indicates the potential for intakes exceeding 100 mrem committed effective dose equivalent.

Emphasize how it is important to integrate several aspects of the radiological control program into an effective internal dose monitoring program. These include: bioassay (selection of participants and isotopes to be monitored), air monitoring, and contamination monitoring (both personnel and area). RCTP 2001-01 describes an acceptable approach for implementing an internal dose monitoring program.

Obj. 5
Identify when termination bioassay monitoring should be conducted.

Discuss site program for routine bioassay.

Show OT 3.9.

– Any contaminated wound. – Contamination on protective clothing, skin or facial area or unplanned spread of contamination on accessible areas above site specified thresholds. – Detectable contamination inside a respirator after its removal. – The Radiological Control Organization directs that bioassay analyses be performed when an intake is suspected.	See page 55 of DOE-STD-1121-98 for recommended values for thresholds. Show OT 3.10.
E. Reducing exposure Incorporate dose reduction, contamination reduction, and waste minimization features into the design of new facilities, or modification of existing facilities.	
1. Maintenance and modification plans and procedures should be reviewed to identify and incorporate radiological requirements, such as the following: • Engineered controls • Dose reduction considerations • Contamination reduction considerations	Show OT 3.11. Review: "Checklist for Reducing Occupational Radiation Exposure" (RadCon Standard, page 3-29)
F. Radiological performance Establish and maintain, from the lowest to the highest levels, line management involvement and accountability for Departmental radiological performance.	Show OT 3.12.

1. Radiological performance goals

    •   Goals are intended as a measure of and a
        motivation for improvement, and not an
        end in themselves.

    •   Performance goals should have these
        characteristics:
        –   Measurable
        –   Achievable
        –   Auditable
        –   Challenging
        –   Meaningful in promoting improvement

    •   Goals need to be developed primarily by
        those responsible for performing the work.

    •   Site-specific goals need to be developed.

2. Performance indicators

    •   Performance indicators should be used as
        tools to assist management in focusing
        their priorities and attention.

    •   Performance indicators should be tracked
        and trended for the prior 12-month period.

    •   To promote worker awareness of their
        radiation exposure status, selected
        indicators related to their work group
        should be posted in the workplace.

    •   Site-specific indicator status reports should
        be tracked.

Show and discuss site-specific
goals.

Identify other site-specific goals.
List on flip chart.

If available, show a recent site-
specific indicator status report.

Summarize lesson.

Ask for questions.

Review objectives.

DEPARTMENT OF ENERGY	LESSON PLAN
Course Material	Topic: Fitness for Duty

Objectives:

   Upon completion of this training, the student will be able to:

   1. Identify ways to verify employee- and operation-specific training requirements for personnel.

   2. Identify methods to determine an employee's dose status.

   3. Describe how the Lifetime Control Level is calculated for radiological workers.

   4. Describe the requirements in order for a female worker to be considered a declared pregnant worker.

   5. Identify the dose limits established for a declared pregnant worker.

   6. List the three main conditions an employee must meet in order to be issued respiratory protection equipment.

   7. Identify the actions that should be taken if intakes of radioactive materials are indicated that could result in a committed effective dose equivalent to or greater than 100 mrem.

   8. Describe the conditions that can induce heat stress and other adverse physical conditions for radiological workers.

   9. Describe the actions that should be taken if a worker exhibits symptoms of heat stress or other adverse stress conditions while working in a radiological area.

Training Aids:

   Overhead Transparencies (OTs): OT 4.1 - OT 4.12 (May be supplemented or substituted with updated or site-specific information)

Equipment Needs:

   Overhead projector

   Screen

Student Materials:

   Student's Guide

   Student Handouts

DEPARTMENT OF ENERGY	LESSON PLAN
Course Material	Topic: Fitness for Duty

References:

  U.S. Department of Energy, 10 CFR Part 835, *Occupational Radiation Protection*, 1998.

  U.S. Department of Energy, *Radiological Control*, DOE-STD-1098-99, July 1999.

  Lau & Shani, *Behavior in Organization*, 1992.

I. Introduction

II. Overview

The workers participate in the organization radiation protection program and have some responsibility to protect themselves, however, they must rely upon the organization to provide a safe work environment, minimize exposure, and provide adequate training.

The first line supervisor has the final responsibility that supervised workers are fit and prepared for their work in radiological areas. Supervisors should not assume that the organization has assured that the worker is adequately trained and physically and mentally ready for the work. This responsibility, in addition to seeing that the job or task is completed properly, is placed upon the supervisor.

III. Work force

To maintain a healthy work force, it is imperative that individual employees arrive at the workplace mentally and physically prepared to act in a safe and effective manner. Problems that raise doubt regarding an employee's ability to act in a safe manner must be dealt with in a straightforward process that encourages the employee to seek the help needed and ensure that the safety of all workers is maintained. Such problems may include alcoholism, drug abuse, mental health disorders, and personal crises.

Introduce module.

State objectives.

Show OT 4.1, OT 4.2, OT 4.3, and OT 4.4.

For the radiological workers, there are additional considerations that may also affect a worker's fitness for duty. These may include the ability to wear respiratory protection, pregnancies, exceeding exposure limits, and heat stress during work in protective clothing. Supervisors of radiological workers must be conscious of these considerations to ensure that their employees are able to perform radiological work in a safe and effective manner.

IV. Training/qualification

Radiological workers should be sufficiently qualified to recognize the symptoms of deteriorating radiological conditions and seek advice from Radiological Control Technicians and their supervisors.

Training requirements have been established to ensure that personnel have the training to work safely in and around radiological areas and to maintain exposure as low as reasonably achievable.

Examinations for Radiological Worker I and II training, and Radiological Control Technician Qualification shall be used to demonstrate satisfactory completion of theoretical and classroom material. Examinations should be written. However, alternatives may be used to accommodate special needs.

In addition, workers may need job-specific radiological training including specific procedure and hands-on tools/equipment training.

Formal records of training and qualification shall be readily available to first line supervisors of involved personnel to aid in making work assignments.

Show OT 4.5.

Obj. 1
Identify ways to verify employee- and operation-specific training requirements for personnel.

Review: "Relationship between Radiological Control Technicians and Workers" (RadCon Standard, article 144)

Review: "General Requirements" (RadCon Standard, article 613)

Instructor may want to insert site-specific alternatives, if any.

(RadCon Standard, article 725)

V. Dose limits and control levels

A. General

Dose limits provided in Subpart C of 10 CFR 835 shall not be exceeded. Administrative control levels are established to maintain personnel radiation exposure well below regulatory dose limits. These levels are multitiered. Increasing levels of authority are required to approve higher administrative control levels. Special consideration must be taken for radiological workers who are approaching administrative control levels.

Review: "Administrative Control Level" (RadCon Standard, article 211)

Obj. 2
Identify methods to determine an employee's dose status.

Insert site-specific administrative control levels here.

Insert site-specific information as to how supervisors can ascertain the dose status of their employees.

B. Lifetime control levels

To administratively control a worker's lifetime occupational radiation exposure, a lifetime control level of N rem should be established where N is the age of the person in years. Special control levels (see Article 216 of RadCon Standard) should be established for personnel who have doses exceeding N rem.

A special control level for annual occupational exposure shall be established for each person with a lifetime occupational dose exceeding N rem. The special control level should not exceed 1 rem in a year and should allow the person's lifetime occupational dose to approach N rem as additional occupational exposure is received.

Review: "Lifetime Control Levels" (RadCon Standard, article 212)

Show OT 4.6.

Obj. 3
Describe how the Lifetime Control Level is calculated for radiological workers.

Insert site-specific levels here.

Review: "Special Control Levels" (RadCon Standard, article 216)

C. Medical exposures

An employer should be attentive to special circumstances of employees, such as those undergoing radiation therapy, and should establish an appropriate special control level.

D. Off-site exposures

Workers are responsible for notifying radiological control personnel of off-site occupational exposures so that individual dosimetry records can be updated.

Site-specific policy for workers receiving medical exposures may be added.

Review: "Occupational Dose Limits" (RadCon Standard, page 2-5).

Show OT 4.7.

DOE administrative levels apply to DOE activities (Art. 211 of the RadCon Standard), while the lifetime control level applies to all occupational exposures. Your site policy should be checked regarding doses incurred from non-DOE activities (e.g., Nuclear Regulatory Commission (NRC) or hospital work).

VI. Declared pregnant employee

A. Notification of employer

After a female radiological worker voluntarily notifies her employer in writing that she is pregnant, for the purposes of embryo/fetal dose protection, she shall be considered a declared pregnant worker. Declarations of pregnancy may be revoked, in writing, by the declared pregnant employee at any time.

1. The employer should provide the option of a mutually agreeable reassignment of work tasks, without loss of pay or promotional opportunity, so that further occupational radiation exposure is unlikely.

Review: "Embryo/Fetus Dose Limits" (RadCon Standard, article 215)

Show OT 4.8.

Obj. 4
Describe the requirements in order for a female worker to be considered a declared pregnant worker.

2. For a declared pregnant worker who chooses to continue working as a radiological worker the following apply:

   - The dose limit for the embryo/fetus for the entire gestation period shall be no greater than 500 mrem.

   - Substantial variation above a uniform exposure rate that would satisfy the limits shall be avoided (e.g. 50 mrem/month).

3. If the dose to the embryo/fetus is determined to have already exceeded 500 mrem when a worker notifies her employer of her pregnancy, the worker shall not be assigned to tasks where additional occupational radiation exposure is likely during the remainder of the gestation period.

Obj. 5
Identify the dose limits established for a declared pregnant worker.

VII. Respirator protection

There are three main requirements that must be met by personnel prior to being issued a respirator. Personnel must be trained, fitted, and medically qualified to wear that specific type of respirator. Training and qualification testing shall be performed annually.

Review: "Respiratory Protection Program Requirements" (RadCon Standard, page 5-10)

Show OT 4.9.

Obj. 6
List the three main conditions an employee must meet in order to be issued respiratory protection equipment.

A. Respirator use

While using respiratory protection, personnel are expected to:

Review: "Use of Respiratory Protection" (RadCon Standard, article 533)

1. Perform fit checks of their respirators to ensure a proper seal before entering areas requiring respirator use.

2. Be clean shaven in the area of the fit.

3. Use corrective lenses, if needed, that are approved for respirators.

4. Be instructed to leave the work area when experiencing respirator failure.

5. Be instructed to remove their respirators to avoid life-threatening situations when exiting an area after respirator failure.

B. Exposure to airborne radioactive materials

    Review: "Handling Individuals Exposed to Airborne Radioactivity" (RadCon Standard, article 543)

10 CFR 835 establishes dose limits which includes internal dose from inhaling radioactive material. Use of engineering and administrative controls and proper use of personal protective equipment results in most planned internal doses being very low.

In cases of unplanned internal doses, potential intakes of radioactive material are suspected when personnel without respiratory protection are exposed to airborne radioactive materials or when respiratory protection has been compromised. If unplanned intakes of radioactive material are indicated that could result in a committed effective dose equivalent of 100 mrem or more, the following actions should be taken:

Obj. 7
Identify the actions that should be taken if intakes of radioactive materials are indicated that could result in a committed effective dose equivalent greater than 100 mrem.

Show OT 4.10.

1. Identify personnel potentially exposed.

2. Determine the duration of potential exposure to airborne radioactivity.

3. Have dose evaluated prior to permitting the worker to return to radiological work.

VIII. Adverse work conditions

A. Heat stress

Heat stress may result from working in areas of high temperature, humidity, and radiant heat; working in protective clothing; and using respirators, particularly where other protective equipment is required. Heat stress has occurred at ambient temperatures less than 70°F when multiple sets of protective clothing or plastic suits were in use or strenuous work was involved.

1. Heat stress controls should be addressed in the planning stages for work.

2. Recommended work time limits and use of body cooling devices should be considered to reduce heat stress.

3. Job supervisors should inform their personnel of heat stress precautions prior to work on job assignments where heat stress may be a factor.

4. If a person begins to feel symptoms of heat stress, the person should immediately notify the nearest coworker, exit the area, remove personal protective equipment, notify the supervisor, and rest in a cool area. In such cases, medical assistance should be provided.

Review: "Heat Stress" (RadCon Standard, article 534)

Show OT 4.11.

Obj. 8
Describe the conditions that can induce heat stress and other adverse physical conditions for radiological workers.

Show OT 4.12.

Obj. 9
Describe the actions that should be taken if a worker exhibits symptoms of heat stress or other adverse stress conditions while working in a radiological area.

B. Other adverse physical conditions

Medical treatment of injuries takes precedence over radiological considerations. A worker with a contaminated injury should receive treatment by medically qualified personnel. An assessment should be made on the need for bioassay monitoring or further medical treatment. Until this assessment is completed, work restrictions may be needed. The worker should be counseled promptly on the medical and radiological implications resulting from the contaminated wound.

Review: "Contaminated Wounds" (RadCon Standard, article 542)

Instructor may want to insert any site-specific policies regarding adverse conditions such as cold weather, etc.

IX. Group activity

Divide class into smaller groups (3-5 people). Refer students to page 1 of handouts and allow them to determine the appropriate job assignments for their personnel based on an assessment of each individual's fitness to perform each task.

Discuss answers.

Summarize lesson.

Ask for questions.

Review objectives.

DEPARTMENT OF ENERGY	LESSON PLAN
Course Material	Topic: Interpersonal Communication

Objectives:

Upon completion of this training, the student will be able to:

1. Identify the components of a communication process model.

2. Describe filters/barriers that distort the communication process.

3. Identify active listening behaviors.

4. Describe the various portions of a conflict resolution model presented in class.

5. Describe some of the key elements in communicating radiation risks to workers.

6. Identify the skills required to conduct a pre-job briefing.

7. Identify the benefits of a successful critique/lessons learned program as described in the *Radiological Control Standard*.

Training Aids:

Overhead Transparencies (OTs): OT 5.1 - OT 5.10 (May be supplemented or substituted with updated or site-specific information)

Exercise (optional)

Equipment Needs:

Overhead projector

Screen

Flip chart

Markers

Masking tape

Student Materials:

Student's Guide

Student Handouts

References:

Lau & Shani, *Behavior in Organization*, 1992.

U.S. Department of Energy, 10 CFR Part 835, *Occupational Radiation Protection*, 1998.

U.S. Department of Energy, *Radiological Control*, DOE STD-1098-99, July 1999.

I. Introduction

II. Communication

A. Communicating is one of the basic functions human beings must perform. Since it is basic, often it is assumed that everyone communicates proficiently. That is not always the case. Often, everyday problems can be traced back to communication as a primary or contributing cause.

Ask students for their definition of communication. Write responses on flip chart.

Communication is the process of transferring information from one person to another.

III. Interpersonal communication

A. Communication styles

Studies show that people tend to communicate in a style that best suits their given personality. There are many personality trait assessments available that give us a better understanding of who we are. Some examples are Myers-Briggs, Herman's Brain Dominance, and Birkman Methods.

B. The communication process

Refer students to page 2 of handouts, "The Communication Process."

1. Sender's filters

Obj. 1
Identify the components of a communication process model.

Use an example to "walk" through the process from sender to receiver.

- The sender has an idea that must be transmitted to a receiver.

- Perceptions, assumptions, attitudes, and past experiences are filters through which the sender's messages must travel. These can distort the idea.

- The sender's message is the focus of the process. It must have an objective (i.e., deliver information, motivate, stimulate, get/provide feedback). It must be concise, logical, and clear.

2. Receiver's filters

- Similar to the sender, the receiver has his/her own filters that can also distort the message.

3. Understanding the message

- It is not the logic of the sender's message that is important, but the logic of the received message. The sender must consider *how his message will sound to the receiver.*

- The accuracy of message interpretation depends upon how well the sender projects the intent, motivation, values, and emotions of the message.

4. Medium

- The medium used for communication can definitely distort the message.

Site-specific communication models may be substituted.

Types: Oral, written, symbols, gestures, etc.

Introduce exercise.

Exercise should be approximately 30 min., including the debriefing.

Participant activity - The objective of the activity is to have each member realize barriers associated with the communication process.
- Split the group into pairs.
- Have each pair designate a sender and a receiver. Have the sender and receiver sit back-to-back.

- General rules
  – The sender must provide instructions to the receiver in order to reproduce a predetermined geometric shape.
  – The sender must not show the receiver the shape.
  – The receiver or sender cannot provide any feedback (verbal or physical) to his/her partner.
  – Set a time limit of 3 to 5 minutes.
  – Be sure to point out that the drawings should match exactly.
- After each pair is finished, have them compare drawings.
- Debrief the exercise by asking the senders and receivers these questions:
  – How did you feel about your role during the exercise?
  – What barriers were imposed on you?
  – How could you have done better?

Write responses on the flip chart. Encourage students to write answers in the Student's Guide.

C. Barriers/filters

1. Five types of communication barriers/filters

- There are two categories of social barriers:
  – Verbal - The use of words with emotional content can interfere with the reception of the intended message (e.g., politics, religion, race).
  – Nonverbal - Nonverbal barriers are usually involuntary or symbolic (e.g., clothes, grooming, or office setup).

- Physical barriers include elements such as noise, distance, data overload, time, media, handicaps, etc.

- Psychological barriers include elements such as tendency to smother information, difference in opinion, lack of trust, assumptions, attitudes, stress, and attention level.

- Individual barriers include elements such as needs, beliefs, education, religion, socioeconomics, culture, values, and self-concept.

- Neurological barriers occur as a result of the way the nervous system filters, distorts, deletes, and interprets information.

Show OT 5.3.

Obj. 2
Describe filters/barriers that distort the communication process.

Relate the barriers/filters to the activity above.

Give examples.

D. Listening skills

1. What is the role of the receiver in regard to listening?

List roles on flip chart. Encourage students to write responses in the Student's Guide.

Responses should include the following:
- By your actions, show interest in the individual to whom you are listening. Show your desire to listen.
- Take time to listen, and be sure you are ready to listen.
- Try to learn something. Be positive rather than negative.
- Get the whole message. Ask the sender to repeat or clarify. Ask who, what, why, where, when, and how.
- Do not interrupt the sender in mid-sentence. Wait for an appropriate pause.
- Concentrate on listening. Ward off distractions.

2. Types of listening

Ask students for the types of listening. List answers on flip chart. Answers should include the following:
- Appreciative: Hearing what is being said
- Discriminating: Sorting stimuli
- Critical: Judging
- Comprehensive: Understanding
- Empathetic: Putting yourself in the sender's position

3. Deterrents to effective listening

Ask students for their responses. List on flip chart. Answers should include the following:
*   Assuming the subject is unimportant
*   Mentally criticizing the speaker's delivery
*   Getting over stimulated when opposing an idea
*   Overreacting to certain words or phrases
*   Listening only for facts, not overall meaning
*   Permitting the speaker to be inaudible or incomplete
*   Avoiding technical messages
*   Daydreaming
*   Dual focusing

4. Elements of active listening

Ask participants for their responses. List on flip chart. Answers should include the following:
*   Pay close attention.
*   Label nonverbal "clues" ("You appear upset.").
*   Put the speaker's words into your own words.
*   Ask open-ended questions for clarification.
*   Use prompts for nonverbal reinforcement.
*   Try to empathize and really feel what the other is feeling.

E. Dealing with confrontation

Whenever people come together in any
environment, there will be opportunities for
confrontation. Confrontation can either stimulate
or demoralize individuals. As a supervisor, it is
essential that you learn how to deal with these
situations appropriately. Following is a model
that illustrates the various approaches to deal
with conflict.

Obj. 3
Identify active listening behaviors.

Obj. 4
Describe the various portions of a
conflict resolution model presented
in class.
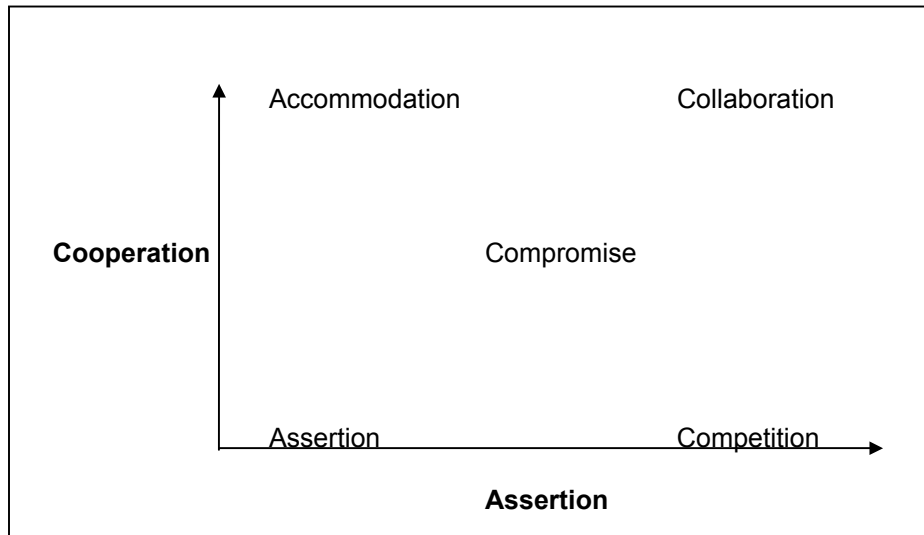
Accommodation		Collaboration
Cooperation	Compromise	
Assertion		Competition
	Assertion	

1. There are many styles of conflict management:

    - Avoidance - This style is considered the least cooperative and the least assertive. In this situation, conflict is not addressed. As a short-term strategy, it may work, but as a permanent strategy, problems may never get solved.

    - Accommodation - This style is characterized by cooperative, unassertive behavior. It means to place the needs and concerns of others above your own needs and concerns.

    - Competition - This style is considered the most assertive. It reflects one's desire to meet his or her needs at the expense of others.

    - Compromise - This style is between competition and collaboration and avoidance and accommodation. The objective is partial fulfillment of the needs, concerns, and goals of all parties concerned. The solution should be mutually acceptable and partially satisfying to everyone involved. Nobody wins and nobody loses.

    - Collaboration - This style uses both cooperation and assertiveness in an effort to satisfy the needs of all parties concerned. Collaboration includes the following:
      – Acknowledgment that conflict exists
      – Identification and acknowledgment of others' needs, concerns, and goals
      – Identification of alternative resolutions and consequences for each party involved

Show OT 5.4.

Discuss the conflict management styles.

– Selection of the alternative that meets the needs and concerns of all parties
– Implementation of the alternative selected

2. Effective conflict resolution

Show OT 5.5.

For effective conflict resolution, establish rules in advance. Rules might include the following:

- When controversy arises, have one party who is not directly involved state the issues before further discussion is allowed.

- All parties must agree on the problem and specifically identify the common goal or solution.

- Each party must be able to restate the other's position to the satisfaction of the individual before any evaluation discussion is allowed.

- All parties will identify and agree upon the criteria to be used in resolving the controversy.

In conflict resolution, it is important to focus on issues--not people. When conflicts arise, keep the focus on the issues and not on the personalities involved.

The key to reaching collaboration is effective communication. The key to communication is trust, and the key to trust is honesty.

IV. Risk communication

A. Communicating risk

Due to the continuing concerns related to low-level radiation exposure and health effects, managers should be trained to deal with the perceptions that personnel have concerning radiation risks. Managers and first line supervisors should ensure that workers understand the fundamentals of radiation, its risks, and their role in minimizing exposure.

It is not sufficient to rely solely on regulatory limits for establishing or defining acceptable work practices and work environments.

Some personnel, such as those who may have internal deposition of radionuclides from prior years, are concerned about future exposures. Such instances warrant special attention on the part of the manager. Counseling with such personnel should be the preferred way to consider relevant factors. In some cases, special control levels should be applied.

B. Motivation to achieve excellence in radiological control

1. No one should be exposed to radiation unless an overall benefit from the associated activity is expected to be realized. As a corollary, the benefit should be maximized and the risk (exposure) minimized.

2. Some workers and members of the public perceive any radiation exposure as an unduly hazardous risk. Making an effort to reduce doses and documenting the actual doses received can reassure these people and reduce the prospects of litigation.

3. A side effect of trying to reduce doses is often an increase in efficiency and a decrease in incidents in performing radiological jobs, since greater planning is required. Records of past similar jobs can assist in planning future jobs and reduce dose further.

C. Fostering positive worker attitudes toward achieving excellence

Worker attitudes are key to radiological performance. A positive attitude makes a person take that one extra step. When everyone's attitude embraces radiological excellence, and the performance is excellent, the program will reduce exposure and environmental burdens.

Show OT 5.7.

Discuss students' perception of workers' responsibilities. List on flip chart. Encourage students to write answers in the Student's Guide.

Answers may include the following:
- Workers understand that they are responsible for control of radiological work that they perform.
- Workers understand the risks of radiation. They convey confidence to family and others.
- Improving attitude is part of training.
- Radiological control is perceived as integral to the job.
- Mechanisms exist to improve worker attitudes, such as a Radiological Awareness Committee and the use of performance indicators.
- Constant improvement in radiological performance is occurring.
- Cooperation between the work force and radiological control organization is stressed. Radiological control cannot be left solely to the Health Physicists.

D. Reducing risk

The following are elements of a radiological control program that help reduce risk:

1. Training must be aimed at what the worker should know in order to do his/her job rather than passing a quiz. The training needs to be documented and recorded accurately.

2. Records and reports are needed for every aspect of the program. Records must be accurate and understandable because they may be used to recreate events that are questioned in the future. Those who fill out, file, review, or otherwise handle records must understand their use and importance.

3. Radiological deficiencies and improvements must be used to develop plans that will further promote radiological excellence. Self-assessments, use of critiques, thorough investigations, and a willingness to be self-critical and accept responsibility are needed. When a radiological deficiency is identified, there should be an honest effort to understand, correct, document, and follow it to closure. Trending deficiencies aids in planning where resources are to be spent to make improvements.

V. Meetings/briefings/critiques

A. Running an effective meeting

In today's business environment, meetings have become a way of life. Today's work force spends a great deal of time "stuck" in meetings. It is essential for those people leading these meetings to become proficient in chairing a meeting. The following are considerations when conducting a meeting:

1. Objective(s)

   • Is a meeting the best way to handle this? If not, don't have a meeting.

   • What do you want to achieve by the end of the meeting? Ensure that participants are aware of your expectations.

2. Persons attending?

   • Who needs the information?
   • Who can contribute?
   • Who would expect to be involved?

3. Amount of prior notice

   • How much preparation time is required?

   • Should any pre-work be sent? Pre-work (i.e., history, data, graphs, etc.) can cut down on the time spent in the meeting.

Show OT 5.9.

Ask students what types of meetings they conduct as supervisors. List responses on flip chart.

4. Agenda

   - Establish a reasonable amount of work that you expect can be accomplished in the specified time.

   - Provide the agenda to participants prior to the meeting.

   - Have enough information in the agenda so that people understand what discussion topics are going to be covered.

   - Establish time limits for each item and attempt to meet them.

5. During the meeting

   - Determine who will be responsible for the meeting minutes.

   - Review the agenda and emphasize time limits.

   - Keep discussions focused on the topics associated with the meeting.

   - If action items are established, ensure individuals understand what is to be accomplished and when it is required to be done.

   - Summarize upon completion of the meeting.

   - Prepare and distribute the meeting results

B. Pre-job briefings

"Planning the work" is an essential part of an effective Integrated Safety Management program. During pre-job work planning meetings, all appropriate safety disciplines must be engaged to ensure that all work hazards are adequately addressed. The following addresses pre-job briefings for radiological controls. Other work hazards should be integrated using a similar approach.

Article 324 of the RadCon Standard recommends pre-job briefings be held prior to the conduct of work anticipated to exceed the site ALARA trigger levels. (This practice further establishes excellence in regard to radiological operations.)

1. The pre-job briefing should be conducted by the cognizant work supervisor. Workers and supervisors directly participating in the job, cognizant radiological control personnel, and representatives from involved support organizations should attend the briefing. A summary of the topics discussed and attendance at the pre-job briefing should be documented.

Obj. 6
Identify the skills required to conduct a pre-job briefing.

Ask students when a pre-job briefing should be held.

Review: "Pre-job Briefings" (RadCon Standard, article 324)

2. As a minimum, the pre-job briefing should include the following:

   - Scope of the work to be performed

   - Radiological conditions of the work place

   - Procedural and Radiological Work Permit requirements

   - Special radiological control requirements

   - Radiologically limiting conditions, such as contamination or radiation levels that may void the RWP

   - Radiological control hold points

   - Communication and coordination activities with other groups

   - Provisions for housekeeping and final cleanup

   - Emergency response provisions

Add site-specific information.

C. Post-job evaluations

During the conduct of radiological work and the handling of radioactive materials, abnormal events may occur that could indicate a weakness or area of programmatic breakdown of radiological controls. Prompt, consistent gathering of facts related to such events is required to satisfy reporting and investigation requirements and to formulate corrective actions to prevent recurrence.

In addition, successful performance or completion of unique activities should be evaluated to identify and incorporate appropriate lessons learned. Analysis of the facts should reveal areas where improvements can be made or identify methods to prevent the recurrence of undesired results.

1. Critiques are meetings that document a chronological listing of the facts of an event. The purpose of the critique is not to assign blame. The following guidelines should be followed regarding critiques/occurrence investigations:

   Obj. 7
   Identify the benefits of a successful critique/lessons learned program as described in the *Radiological Control Standard*.

   • Critique meetings should be conducted for successes and abnormal events.

   Critiques are described in the RadCon Standard, article 351.

   • Properly trained critique leaders should facilitate the critique process.

   Show OT 5.10.

   • Critique meetings should be conducted as soon as practical after the event or situation is stabilized or completed.

   • Minutes of the meeting must be kept.

   • All who can contribute should attend.

   • Supporting materials should be brought to the critique.

     Refer to RadCon Standard Article 351 for a complete list.

2. Post-job ALARA reviews may take the form of a debriefing or may be a review by one or more designated individuals and should be performed in the following cases:

    - After completion of a nonroutine radiological job or operation

    - After completion of a nonroutine or complex radiological job or operation if a pre-job formal radiological review was required or if an ALARA trigger level was exceeded in the course of the work

Ask when this is required and what these levels are at their sites (e.g., as given in the RadCon Standard).

Sites may add site-specific information depending on the involvement of supervisors in the post-job ALARA review.

Ask what is done at students' sites. For example, is the post-job evaluation performed by the site ALARA group?

3. Lessons learned are available from post-job reviews, critique minutes, and occurrence reports (using the Occurrence Reporting and Processing System [ORPS]). Organizations responsible for radiological work and line management should evaluate lessons learned, provide prompt distribution, and incorporate the lessons into the Radiological Control Program.

Summarize lesson.

Ask for questions.

Review objectives.

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DEPARTMENT OF ENERGY	**LESSON PLAN**
Course Material	Topic: Problem Analysis and Decision Making

Objectives:

Upon completion of this training, the student will be able to do the following:

1. Identify problems or decisions faced by supervisors of radiological workers.

2. Identify the components of decision making.

Training Aids:

Overhead Transparencies (OTs): OT 6.1 - OT 6.4 (May be supplemented or substituted with updated or site-specific information)

Equipment Needs:

Overhead projector

Screen

Flip chart

Markers

Masking tape

Student Materials:

Student's Guide

Student Handouts

References:

Lau & Shani, *Behavior in Organization*, 1992.

I. Introduction

II. Problem analysis

Supervisors of radiological workers are often faced with critical decisions. Providing a model for strategic decision making will ensure that these critical decisions are made in an efficient, rational manner.

Introduce module.

State objectives.
Show OT 61.

Obj. 1
Identify problems or decisions faced by supervisors of radiological workers.

Ask students about typical problems faced or decisions made each day as Rad Worker Supervisors.

Take 15-20 minutes and brainstorm inputs. Encourage students to write responses in the Student's Guide. List these on flip chart and post for reference through the rest of the module.

Divide the inputs into categories that are specific to Rad Worker Supervisor and General Supervisor issues.

Typical inputs:
- Contamination
- Exposure limits exceeded
- Training
- Scheduling
- Union relations
- Promotions
- Performance evaluations
- Pregnant workers
- Rad work permits
- Operating procedure interpretation
- Budget

As the rest of the module progresses, refer back to problems identified by students for examples.

A. Stating the mission

   In making decisions, the organization's mission and resultant goals should always be considered. Decisions should be consistent with the stated mission of the organization. Prior to decision making, the organization's mission must be defined. This may be difficult if the organization's mission has not been defined or if there are conflicting goals within the organization.

B. Assessing internal and external environments

   Prior to making a decision or solving a problem, the problem must be identified and evaluated to ensure that all factors have been included in the problem statement.

   1. Problem diagnosis - Identify the problem.

   2. Problem specification - Clarify the specific nature of the problem.

   3. Problem framing - Frame the problem in a nonjudgmental way.

   4. Problem formulation and reformulation - Restructure the problem in a way that will make it easier to solve. This can be done by introducing accurate assumptions.

Obj. 2
Identify the components of decision making.

Show OT 6.2.

III. Decision making

A. Developing strategy   Show OT 6.3.

Once the problem has been identified, alternative solutions must be generated. A general rule for decision making is as follows: if an acceptable standard solution is available to a problem, then it should be used instead of spending time and resources reinventing a solution. If a standard solution is not available, alternatives must be developed.

1. Standard solutions involve using standard operating procedures as well as available alternatives. Optimization techniques, which include cost-benefit analysis, are a fundamental part of work reviews and of radiological analyses for new designs and modifications. For review of minor or routine activities with low associated doses, a cost-benefit evaluation may be an intrinsic part of the engineering or operations review process, so a detailed evaluation is usually not necessary. For review and planning of major tasks involving higher collective dose expenditures, a detailed and documented evaluation should be performed.

2.   A simple optimization decision may be made by choosing a low-current-dose worker instead of a high-dose worker or by declining to spend a large sum to save only a few mrem. Note that the writing of work planning documents (e..g., Radiological Work Permits, work packages, procedures, etc.) is also an optimization evaluation, in which the line supervisor must usually concur.

Although the supervisor may not have to perform detailed optimization Evaluation, that information may need to be provided to the person(s) who will do the evaluation.

Such information will often be based on past operating experience and may include costs of equipment, person-hours, number of people, amount of time spent in radiological areas, and even subjective judgments regarding the feasibility of alternatives.

B. Limits on decision making

1. When supervisors make decisions, they need to determine how much power they have in reaching a final decision and how much influence they have over the process. This is important information when considering the most appropriate alternatives.

2. The decision maker must also determine what the political impact of various decisions will be. There may be political reasons why the most rational solution is not feasible.

3. When selecting an alternative, it is important to consider the repercussions of not selecting various alternatives. If there is strong opposition to a selected alternative, the decision maker needs to be able to support the current decision and explain why the competing solution is less feasible or less desirable.

Emphasize that if supervisors are involved in cost-benefit analysis, they should seek additional training in this area.

C. Making the decision

The formal decision analysis will be as follows:

- Define alternative courses of action, determine the criteria to use in evaluating the alternatives, and identify key uncertainties in the decision.

- Assess the consequences of selecting each alternative.

- Assess the probabilities and preferences by looking at the uncertainties and utilities of each outcome.

- Evaluate alternatives in terms of the stated criteria.

- Analyze the optimal solutions for any adverse consequences.

- Select the most effective solution based on problem analysis.

D. Implementation and controlling execution of strategy

Once a decision is made, the decision will be implemented and evaluated. It is important to monitor events after implementation to ensure that the outcomes are as expected. If not, it may be necessary to revise the original decision. Monitoring outcomes of decisions will also provide lessons learned for future decision making.

E. Case studies

Refer students to "Internal Exposure and Contamination During Pump Removal," page 3 of handouts. Allow approximately 30 minutes.

Read the case and allow a few minutes for students to review the facts. Facilitate discussion and application by working through the steps on the flip chart. Allow 15-20 minutes for discussion of this case.

Using the decision-making model, solicit inputs from the class for each step:

1. Alternative courses of action might include cutting the pump mount bolts, repairing the pump in place, or removing the mounting plate.
2. Assess the consequences of each alternative (e.g., possible damage to the pump, etc.).
3. Examine the uncertainties and utilities of each outcome. Can the bolts be cut without damage? Has the pump ever been repaired in place?
4. Evaluate alternatives.
5. Analyze optimal solutions for any adverse consequences. Should possible hidden contamination have been considered? What about records?
6. Select the most effective solution.

Refer students to "Fire in a Contaminated Cutting Facility," page 4 of handouts. Suggest they take 5-10 minutes to review the case and 15-20 minutes to discuss the alternatives.

The class will then divide into small groups and discuss the second case. Each group will select a spokesperson to present the group's decision and explain the process to the class.

Each spokesperson will then briefly outline his/her group's decision. The instructor should act as a facilitator at this point, keeping discussion going and on the subject.

Summarize lesson.

Ask for questions.

Review objectives.

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DEPARTMENT OF ENERGY	LESSON PLAN
Course Material	Topic: Motivation

Objectives:

    Upon completion of this training, the student will be able to do the following:

    1. Identify motivation issues faced by radiological worker supervisors.

    2. Identify several ways to motivate personnel.

    3. Identify several tools of motivation.

Training Aids:

    Overhead Transparencies (OTs): OT 7.1 - OT 7.9   (May be supplemented or substituted with updated or site-specific information)

Equipment Needs:

    Overhead projector

    Screen

    Flip chart

    Markers

    Masking tape

Student Materials:

    Student's Guide

References:

    Lau & Shani, *Behavior in Organization*, 1992.

I. Introduction

II. Motivation

The roles and responsibilities of a supervisor include motivating personnel to perform quality work. There are many theories of motivation. Some have been found to be effective and some have not. It is important for supervisors to understand which theories of motivation are valid and which techniques will be most effective.

III. Why are people motivated?

A. Needs fulfillment theories

Need fulfillment theories of motivation state that people are motivated by inherent needs and specifically by unmet needs. Behavior is based on inherent needs.

1. Maslow's hierarchy of needs

1. Physiological
2. Safety
3. Belongingness
4. Love
5. Self-actualization

In an organization, one typically assumes that an individual's basic needs have been met (food, shelter, clothing). However, other needs may not have been met. Supervisors should be aware of employees' need for a safe and secure working environment. This is a critical issue for supervisors of radiological workers.

It is not the organization's responsibility to fulfill higher level needs (belongingness, love, self-actualization). However, supervisors should understand how these needs translate into motivation. If employees feel like they are part of a work team, they will be more loyal, and perhaps be motivated to work harder. The need for self-actualization can often be encouraged by providing employees with the authority to make decisions that are critical to their working environment.

2. Job enrichment theory

The job enrichment theory of motivation states that certain job dimensions will motivate employees to work more effectively.

Job dimensions include the following:

- Skill variety

- Task identity

- Task significance

- Autonomy

- Feedback

These job dimensions will provide meaning to the job, make an employee responsible for the job, and provide feedback concerning how the job is progressing.

Show OT 7.3.

Obj. 2
Identify several ways to motivate personnel.

Supervisors should evaluate the jobs of their workers to determine if these dimensions are part of the job. If not, the need for job redesign may be indicated.

3. Need for achievement theory

    In this theory, it is believed that some employees have a need for achievement, while others do not. If a person has a high need for achievement, he/she will do better in "achieving situations." These situations may be characterized as follows:

    - Personal responsibility is evident. The individual will receive credit for a job well done.

    - The task should be at an intermediate to average level of difficulty. There should be a good chance of success.

    - The individual needs to receive feedback.

    - The individual needs to feel challenged.

    - The situation should be ongoing, with consequences in the future.

    Although a supervisor cannot change an individual's need for achievement, understanding this theory may explain what motivates some employees.

B. Cognitive theories

    Cognitive theories of motivation state that a person's behavior is based on a cognitive process. People think before they act.

Show OT 7.4.

Show OT 7.5.

1. Equity (justice) theory

   This theory is based on the equity of input (work) and output (rewards). Employees' output is based on their perceived level of their own input, as well as their perception of the input and output of others.

   If employees believe that their input is greater than that of others (or their output is less), they will try to balance the situation by doing the following:

   - Reducing their input (decreased productivity, absenteeism, tardiness)

   - Increasing their rewards (employee theft, i.e., supplies, phone calls, inflated expense statements)

   - Leaving the job in search of a more equitable situation

   Supervisors should be aware of this theory and assess whether there is equity in the workplace for each worker as well as across the team. By understanding the equity theory, supervisors can understand behaviors stemming from real or perceived inequities.

2. Expectancy (choice) theory

   For the expectancy theory, the primary motivation is the attainment of goals. Behavior is based on a person's expectation that his or her effort will lead to a certain type of performance. This in turn will lead to a certain level of reward (e.g., If I work hard, I will do a good job and get a good reward). Employees make clear choices about the level of effort they will exert based on these expectations.

For employees to be motivated, there must be a clearly defined relationship between performance and rewards (compensation system). There also has to be a link between effort and performance. The supervisor must be aware of an individual's effort and consequent performance.

The supervisor must provide feedback to the employee that will enable the link between effort and performance to be more direct.

C. Reinforcement theories

The basic tenet underlying reinforcement theories is that people are motivated by rewards for their behavior. People work because they are rewarded. A reward is considered something of value to the employee. The most basic is compensation (pay, benefits, leave time). Other rewards include recognition and job prerequisites. Following this theory, supervisors should assess the rewards and recognition given to their employees.

IV. Tools of motivation

Obj. 3
Identify several tools of motivation.

A. Goal setting

Ask students for types of motivational tools. List on flip chart. Encourage students to write responses in the Student's Guide. Allow 30 min. for this activity. Responses may include the following:

Goal setting is one of the most researched areas of motivation, the basic conclusion is that goals motivate people. A goal is something that a person tries to attain, achieve, or accomplish. Once a goal is set, behavior is based on the attainment of that goal. Specific goal-setting techniques will be presented later.

- Goal setting
- Empowerment
- Recognition
- Rewards
- Coaching and mentoring (covered in leadership module)

Why do goals work?

- Goals give an employee direction.

- Goals influence the intensity with which an individual works toward attainment of a goal.

- Goals influence the persistence with which an individual works toward attainment of a goal.

- Goals typically require individuals to develop a strategy for goal attainment.

For goals to be effective motivators, they must have the following characteristics:

1. Goal difficulty

   Employees become more committed to difficult goals. If a goal is too easy, employees will not seriously commit to goal attainment because there is no challenge.

   However, if the goal is too difficult, employees will not make a commitment because they don't believe they can accomplish the goal.

2. Goal specificity

   The more specific a goal, the easier it is to achieve. Specific goals provide more detailed direction toward attaining that goal.

3. Employee participation in goal setting

   An individual must internalize a given goal before it becomes a motivation. The best way to do this is for the individual to participate in setting the goal. When employees are involved in goal setting, they have a much better understanding of the goal, as well as how to achieve it.

4. Feedback

    An individual must know when he or she has achieved a set goal. It is important to have progressive feedback on goal attainment.

B. Empowerment

Employee empowerment is a philosophy of transferring power from management to employees. By doing this, employees become more involved in their work and accept responsibility for their actions. Employees will be more motivated to do quality work if they have been involved in critical decisions and have a sense of ownership in the job.

Even though empowerment is a strategy that affects the entire organization, the basic empowering relationship is between a supervisor and subordinate. It is the immediate supervisor who transfers power to an employee.

The steps toward empowerment are listed below: | Show OT 7.8.

1. Develop an operational definition of empowerment. The definition should be very clear as to what empowerment means from both the manager's perspective and the employee's perspective. The goals and objectives of empowerment should be stated clearly and be behaviorally based in order to evaluate the success of any intervention.

2. Assess strategies used to empower employees. Identify techniques that would be appropriate for your group. This list will be tentative and will be refined as more information is gathered. Techniques include participative decision making, job enrichment, redesign of internal processes, etc.

3. Clarify and communicate organization/ division mission. An underlying assumption in empowering employees is that their actions will support the company's goals and objectives. To ensure that this happens, employees need to be very clear on the company's goals and objectives. All employees should know what their mission is and how it fits into the overall mission of the organization.

    The goals and objectives of the division should be concrete and expressed as specific outcomes to be achieved. Employees will need some guidelines for the decisions they will be asked to make. The division goals and objectives provide global guidance.

4. Determine the boundaries and limitations of each strategy used. Decisions can be classified into executive decisions and operational decisions. Executive decisions involve the overall mission of the organization, the political climate, and the global strategy. Operational decisions are day-to-day decisions made in developing the "product." It is important to know which decisions employees will be able to make on their own.

There are also organizational and regulatory restrictions in decision making that must be clarified. These decisions include fiscal decisions, standard operating procedures within the organization, restrictions imposed by DOE, etc. Identifying decisions that are not appropriate for participative decision making will narrow down those decisions that are appropriate.

5. Assuming participative decision making is to be used, determine what decisions are appropriate to delegate. Once boundaries and limitations are defined, come up with a tentative outline for the types of decisions that are appropriate for sharing with employees and those that are not appropriate. This outline is tentative and requires input from other managers, employees, and the administration prior to being implemented.

6. Decide whether empowerment strategies will be required or voluntary. Will a manager or employee have a choice of whether he/she will participate? What degree of delegation/empowerment will be required?

7. Communicate the tentative plan to managers, supervisors, and the administration. Prior to getting input from employees, get initial input from managers, supervisors, and the administration. This information will help determine the feasibility of employee empowerment.

Show OT 7.9.

8. Get input from employees. Find out their concept of empowerment. Determine to what degree employees already feel empowered. This can be done through a survey (preferably anonymously). This step is risky because it can raise expectations. This should only be done if you have definite plans to proceed. However, it should be done prior to developing an elaborate strategy for empowering employees.

   If the goal of empowerment is motivational, you have to find out what the employees want. On the other hand, if the goal of empowerment is to reduce the work load of middle management, you have to get employee buy-in; otherwise, it will flop.

9. Determine skills necessary for empowerment. It cannot be assumed that managers and employees have the skills necessary to transfer power. The first step is to determine what skills are necessary for shifting power. Managers will need the skills necessary to determine what decisions are appropriate for staff to make.

   Employees must know how to make decisions, how to prioritize, when <u>not</u> to make decisions, what the boundaries are, etc. Once the skills have been identified, it is important to know who has the requisite skills and who doesn't. Some type of assessment is necessary.

10. Communicate plan to employees and provide a mechanism for feedback. Introduction to the plan should be low-key and not raise expectations. Consider having each program, or supervisor, communicate the plan as opposed to an announcement from the division office. This will help keep the focus on the program.

11. Provide training if needed. Based on the assessment of skills, training may be necessary for those managers and employees lacking requisite skills.

C. What other tools could be used to motivate employees?

Students will brainstorm a list. List on flip chart.
Encourage students to write the list in the Student's Guide.

Summarize lesson.

Ask for questions.

Review objectives.

DEPARTMENT OF ENERGY	LESSON PLAN
Course Material	Topic: Leadership

Objectives:

Upon completion of this training, the student will be able to do the following:

1. Identify leadership issues faced by radiological worker supervisors.

2. Identify characteristics of a good leader.

3. Describe the various types of power and influence in organizations.

4. Identify several tools of leadership.

Training Aids:

Overhead Transparencies (OTs): OT 8.1 - OT 8.10 (May be supplemented or substituted with updated or site-specific information)

Equipment Needs:

Overhead projector

Screen

Flip chart

Markers

Masking tape

Student Materials:

Student's Guide

Student Handouts

References:

Lau & Shani, *Behavior in Organization*, 1992.

I. Introduction

II. Leadership

A supervisor is more than just a person who sees that a job is conducted and a task completed in accord with directions; he/she is also a leader. The more an organization rewards it's effective leaders, the fewer employee problems they will have.

A. Definition of leadership

Leadership is a process that includes influencing:

*   The objectives and strategies of a group or organization

*   People in the organization to implement the strategies and achieve the objectives

*   Group maintenance and identification

*   The culture of the organization.

B. Characteristics of good leadership

The characteristics of good leadership can be placed in the following categories:

*   Leadership traits

*   Motives of leaders

*   Leadership skills

Introduce module.

Show OT 8.1.

State objectives.

Ask students to state what their definition of leadership is. Write definitions on flip chart. Comment on the diverse responses.

Obj. 1
Identify leadership issues faced by radiological worker supervisors.

Refer to the definition of leadership, and ask for examples under each bullet.

Ask students what issues their employees bring to them. List on flip chart.

Show OT 8.2.

Obj. 2
Identify characteristics of a good leader.

1. Leadership traits

    •   High energy level

    •   Stress tolerance

    •   Integrity

    •   Emotional maturity

    •   Self-confidence

2. Motives of leaders

    •   Need for power

    •   Need for achievement

    •   Need for affiliation

3. Effective leadership skills

    •   Planning and organizing

    •   Problem solving

    •   Clarifying and monitoring

    •   Informing

    •   Motivating and consulting

    •   Recognizing and supporting

    •   Team building, networking, and delegating

    •   Developing and mentoring

    •   Rewarding

Show OT 8.3.

Show OT 8.4.

Show OT 8.5.

Show OT 8.6.

This section should be followed by a discussion of what the students believe the characteristics of a good leader to be.

C. Power/influence

1. Types of power

    *   Legitimate power - Supervisors have legitimate power based on their position in the organization.

    *   Coercive power - Supervisors have coercive power based on their control (real or perceived) over punishment.

    *   Reward power - Supervisors have reward power based on their control (real or perceived) over rewards.

    *   Expert power - Supervisors have expert power based on their level of technical expertise.

2. Influence tactics include the following:

    *   Rational persuasion

    *   Inspirational appeals

    *   Consultation

    *   Ingratiating

    *   Personal appeals

    *   Upward appeals

Show OT 8.7.

Obj. 3
List the various types of power and influence in organizations.

This section should be followed by a discussion on how students believe power influences leadership.

Show OT 8.8.

III. Tools of leadership

   A. Providing vision

   A good leader provides vision for the work unit. The vision is a clear, concise view of what the work unit is striving to accomplish. The vision for the work unit should be consistent with the vision of the organization.

   Ideally, the vision for the work unit will be developed with input by the work unit.

   If a vision is clearly stated and accepted by the work unit, it becomes a goal of each member of the unit.

   B. Coaching/mentoring

   One of the roles of a leader is to develop his or her workers. Leaders are in the best position to see individual efforts and how they help to achieve or hinder goals. By coaching or mentoring, a leader can guide a worker toward goal attainment.

   Coaching and mentoring include the following:

   • Help each worker set goals and identify barriers to overcome.

   • Solicit ideas and assistance from workers in solving problems that arise in the organization.

   • Know the deficiencies of employees and develop a plan for them to acquire the knowledge and skill needed. Feedback and training will facilitate development of employee knowledge and skills.

Show OT 8.9.

Obj. 4
Identify several tools of leadership.

- Reinforce positive behavior changes that increase productivity.

C. Delegating

Part of a leader's role is to delegate tasks and decisions to employees. The level of delegation typically depends on one's style of leadership. Some leaders feel comfortable in delegating responsibility along with the delegated tasks, while others feel more comfortable delegating only the task.

Prior to delegating, a leader must consider the following:

- Is the employee capable of completing the assigned task?

- Does the employee have the necessary resources to complete the task (human resources, financial resources, training)?

- What are the consequences of failure? The supervisor will have to assess the level of risk in the task and determine whether the organization can assume the risk of error.

- What type of supervision is necessary? The supervisor should decide how closely he or she should be involved. This will be contingent on the competency of the employee, the level of risk associated with the task, and the leadership style of the supervisor.

Ask students for other items that might need to be considered prior to delegating. List on flip chart.

D. Team building

An effective way of leading a group of individuals is to allow them to lead themselves. The use of self-managed work teams can be an effective way to motivate employees to work more efficiently and to work together.

The concept of self-managed work teams focuses on the team member as the expert. By allowing the team to make and implement decisions, decisions are being made by those individuals with the most knowledge and experience.

The following organizational context factors will increase the likelihood of success for teams:

- Management support

- Mission clarity

- Autonomy

- Rewards for the team

- Team training

- Feedback on performance

- Organization culture conducive to teamwork

- Appropriate physical facility

The following team development factors will increase the likelihood of success:

- Communication

- Cohesion

- Developed norms

- Role clarity

- Cooperation

- Participation

- Conflict resolution

Show OT 8.10.

Review and discuss page 6 of Student Handout "Supervisor's Responsibilities".

Summarize lesson.

Ask for questions.

Review objectives.