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Operating Team Training - Technical Training's Role

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OPERATING TEAM TRAINING-
TECHNICAL TRAINING'S ROLE

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ABSTRACT

Technical trainers must assume an increased role in the team training of operating crews of a nuclear facility. Historically, team training has been a human resources type mission because of the focus on interpersonal skills and group skills. The technical trainers have traditionally confined themselves to job-specific technical areas. The gap between these two can be closed by the combined efforts of the two organizations, with the technical trainers taking the lead in program development. This paper describes key elements of the program developed by the training staff at the Fast Flux Test Facility, operated by Westinghouse Hanford Company for the U.S. Department of Energy.

BACKGROUND

Operators must have technical training to understand the technical aspect of their job, such as procedures, technical specifications, and system theory. They must also have human resource training in skills such as communication, decision making, stress management, and leadership.

Often, the operator is trained on one set of skills separately from the other. An every day example of this method of training would be if a person was going to learn how to ride a bicycle. The trainer teaches that person how to pedal in one lesson, how to hold the handle bars in another, and then assumes that the person knows how to sit on the seat. The person would then be expected to ride a bicycle after only these two lessons. He or she would have to integrate the separate skills without any further assistance. This is not the way most of us learned to ride a bicycle. Someone was close at hand to give encouragement and make the failures a little less painful.

THE TECHNICAL TRAINER'S NEW ROLE

The technical trainer's role is to establish an environment that models the normal work setting and allows for evaluating and critiquing the individual and group while learning new skills. Technical trainers are best suited for this, because they should have a viewpoint that allows them to see both the human development and technical side of an issue. This change is not only occurring in the nuclear industry but many others, such as the airline industry, as well.

This does not mean that the training on specifics can be abandoned. Training in each of these areas must be done to lay the foundation for team building. The training conducted in the human resources and development area is essential.

ELEMENTS OF A SUCCESSFUL PROGRAM

This program begins with the assumption that the crew has participated in a training session addressing interpersonal and group skills. This training gives them the skills for self-assessment and group processes that they will need in an integrated approach from which the crew can synthesize their own solutions. Now the stage is set to give the crew data from the normal work environment to assess. The technical training program at the Fast Flux Test Facility (FFTF) takes over from here. The key elements of this training program follow.

1. Use of video recording of actual in-plant performance as part of the needs assessment and feedback data.

2. The crew is trained as an integral group.

3. The crew management is included in the setting of goals for each session.

4. Training has a video-taped simulator phase to allow practice of skills in a "normal" setting.

5. The crew conducts a self-assessment of all video-taped sessions.

DATA COLLECTION

The first step is data collection. What is to be the focus? For the data to be valid it has to reflect objective and subjective information about the crew's performance. Video tape recording of actual in-plant performance during drills provides a major part of this data. The recording reflects real-time and real-life conditions that the operating crew face to solve a presented problem. The validity of this information cannot be questioned. The recording helps open the door to what the crew members were thinking and what perceptions they were receiving concerning the problem.

To fully understand the dynamics of the crew's behavior, subjective information concerning their perception of the problem and the process in which they were involved must be examined. For example, if a crew member failed to report some indication that was available to him or her, what was the reason? Maybe the indication did not make sense to the individual, did not appear to be of any use, or that person did not think his or her input would be used. This kind of information cannot be obtained simply by watching an instant replay of the events. Some discussion concerning what happened needs to be generated. This is an example of where the interpersonal skills learned in the human resources and development training need to be used and reinforced. An honest appraisal and review of the individual's perceptions and decisions is critical to identifying problems.

The best way to generate this discussion is to collect some subjective information from the individual operator. Table 1 is an example of the type of questionnaire used.

TABLE 1

Questionnaire for Team Building Sessions

Answer each question on a scale of 1 to 5:

1 strongly agree
2 agree
3 situational
4 disagree
5 strongly disagree

During Plant problems or drills, I get the information I need without asking.

1	2	3	4	5
strongly agree	agree	situational	disagree	strongly disagree

During Plant problems or drills, I supply the information that others need without being asked.

1	2	3	4	5
strongly agree	agree	situational	disagree	strongly disagree

It is important to be the first one to solve the problem.

1	2	3	4	5
strongly agree	agree	situational	disagree	strongly disagree

There is a fixed process that our crew uses to solve problems.

1	2	3	4	5
strongly agree	agree	situational	disagree	strongly disagree

My input and ideas during problem solving are valued.

1	2	3	4	5
strongly agree	agree	situational	disagree	strongly disagree

Our crew works well as a team.

1	2	3	4	5
strongly agree	agree	situational	disagree	strongly disagree

This data collection is the first step in an action research process.[1] From this the goals for training can be derived and the training structured to get at the issues.

THE INTEGRAL GROUP

Members of an operating crew seldom work in complete isolation. This can be modeled by a set of points connected with a string. The relationship of any one point in the matrix is determined by several relationships at a time. It takes considerable effort to change the relationship through one point. Movement of all the points, in concert, can generate significant change with less effort. The larger the number of individuals in a group, the more rigid a person's position and relationship in the group becomes.

Instead of training the individual and depending on his or her ability to implement the training at the work site, the group needs to be trained. When an operating crew receives training as a group, the stage is set for tremendous changes in individual and team performance. The team can learn, adapt, and establish new norms; this allows the individual to change.

The crew first receives group training directed at giving them the group skills that allow self-assessment. Integral to this is the giving and receiving of feedback. Next, based on the information from the video-tapes and surveys, training goals are set to allow the group to work on specific issues. Working with the operating crew as one unit in this phase allows the crew to take ownership of the results of the training. There is no question that the training is relevant to their work.

CREW MANAGEMENT INVOLVEMENT IN THE GOAL SETTING

Each crew operates pretty much as an autonomous group, and the ways in which a given crew deals with a situation reflects the management styles of the immediate crew management. At FFTF, each crew has a Shift Operations Manager and an Assistant Shift Manager; the division of responsibilities between these two varies from crew to crew. For the training to support a given manager it has to reflect his or her style in setting the goals and planning the training to be done in response to the collected data.

Even though this is simply stated and the logic may seem straightforward, this is crucial. Technical trainers normally work towards being the source of "THE ANSWER." In team training, technical trainers are not the source of answers, but the source of a training environment. How threatening this can be to a manager because of the potential change that can be generated needs to be understood. This is why crew management involvement in planning the second phase of the training is a must.

A general goal of this training is to give the operators and their managers tools for increasing efficiency and productivity. This needs to be validated with the crew during the feedback sessions. This process continues to support the individual manager and allows the crew to take greater ownership in the outcome of the training.

THE SIMULATOR SESSION

The simulator provides the best situation for integrating the process. The crew can now use the tools in a situation that closely reflects their

normal work environment. The use of the simulator allows an opportunity to fine tune the decisions made during the rest of the training process.

This fine-tuning process is supported by videotaping the simulator session and the crew using its own observers. The observers perform best when they have had input into developing a checklist or guide to key them to the desired behaviors. This checklist is developed as part of the previous feedback and exercise session that is conducted with the crew while observing the tapes of in-plant drills.

CREW SELF-ASSESSMENT

The answers and solutions must come from the crew. The crew's ability to conduct a self-assessment is just as vital as the manager's involvement in the goal setting. Just as the crew is the source of the answers in this kind of training, they are also the source of information. The training is directed towards meaningful goals with this information. This process allows the crew to take ownership of the results of the training. In addition, the self-assessment process becomes stronger by including it in this training.

Because this information is sensitive, it has to be treated as the property of the crew. All video tape and survey information should be destroyed after the training. This facilitates a more open and honest appraisal of the crew's performance.

SUMMARY

This training process has been found successful and addresses the needs of the operating crew. Obviously, it does not stand alone. It requires (1) the support of trainers from human resources to provide the basic training, (2) a greater interface between the technical and human resource areas, and (3) plant management must make a commitment to the training. The bottom line is that a greater payoff is possible when all these factors work together. This payoff includes better team problem solving, better management of operating crew resources, and a higher level of professionalism.

REFERENCE

1. French, W. L. and C. H. Bell, Jr. Organization Development. New Jersey: Prentice Hall, 1973.

Human Resource Development's Focus (typical)

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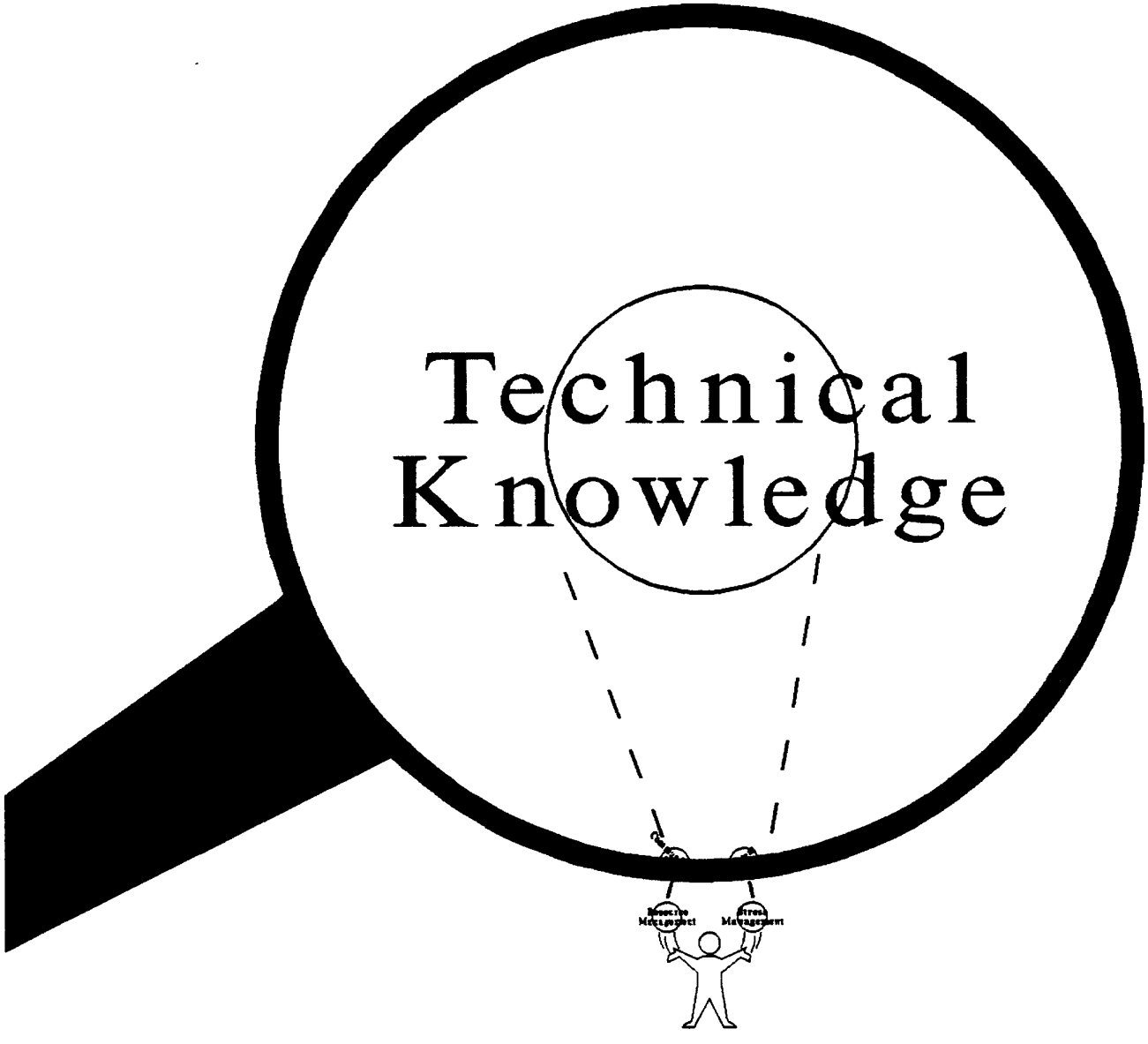
Technical Training's Normal Focus



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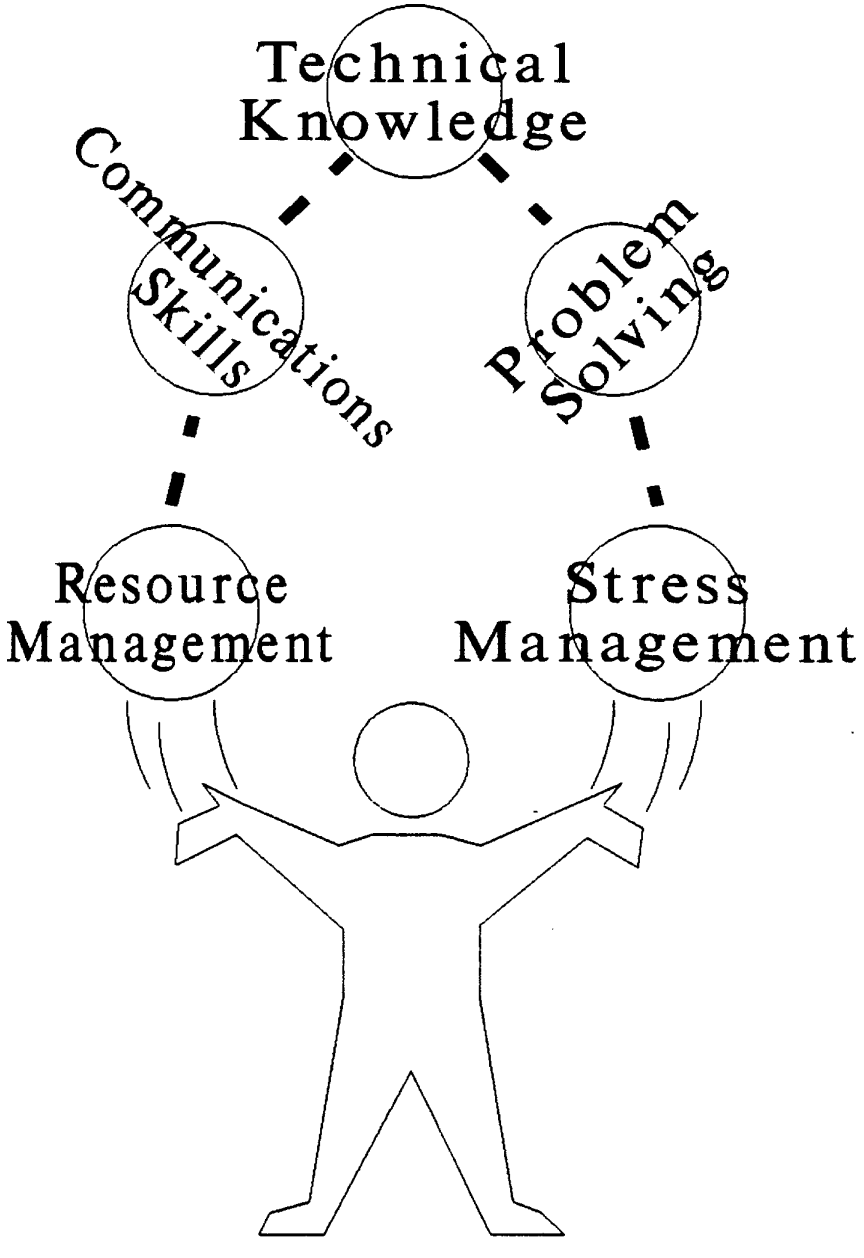
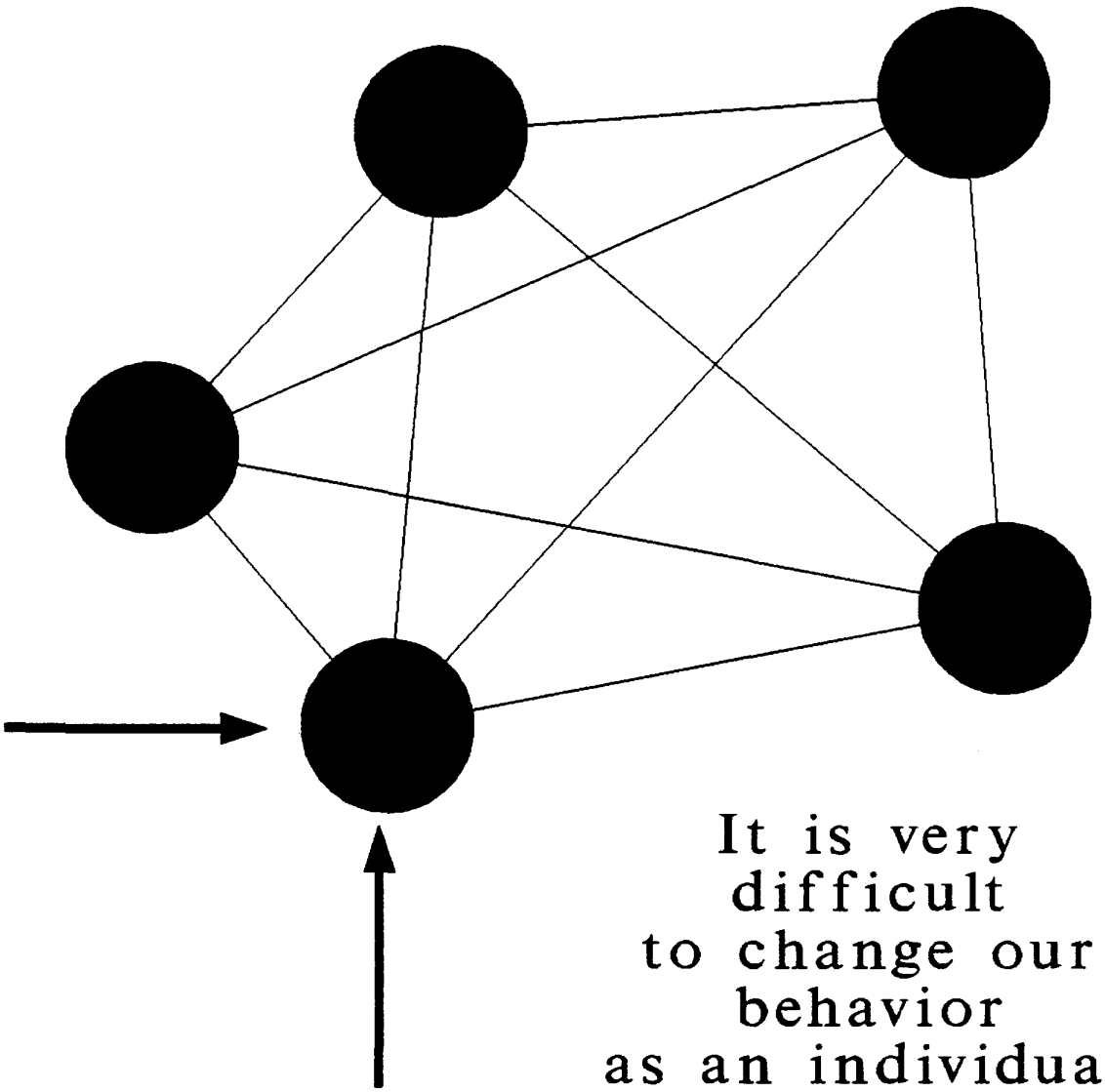
The Operator's Job



Key Elements:

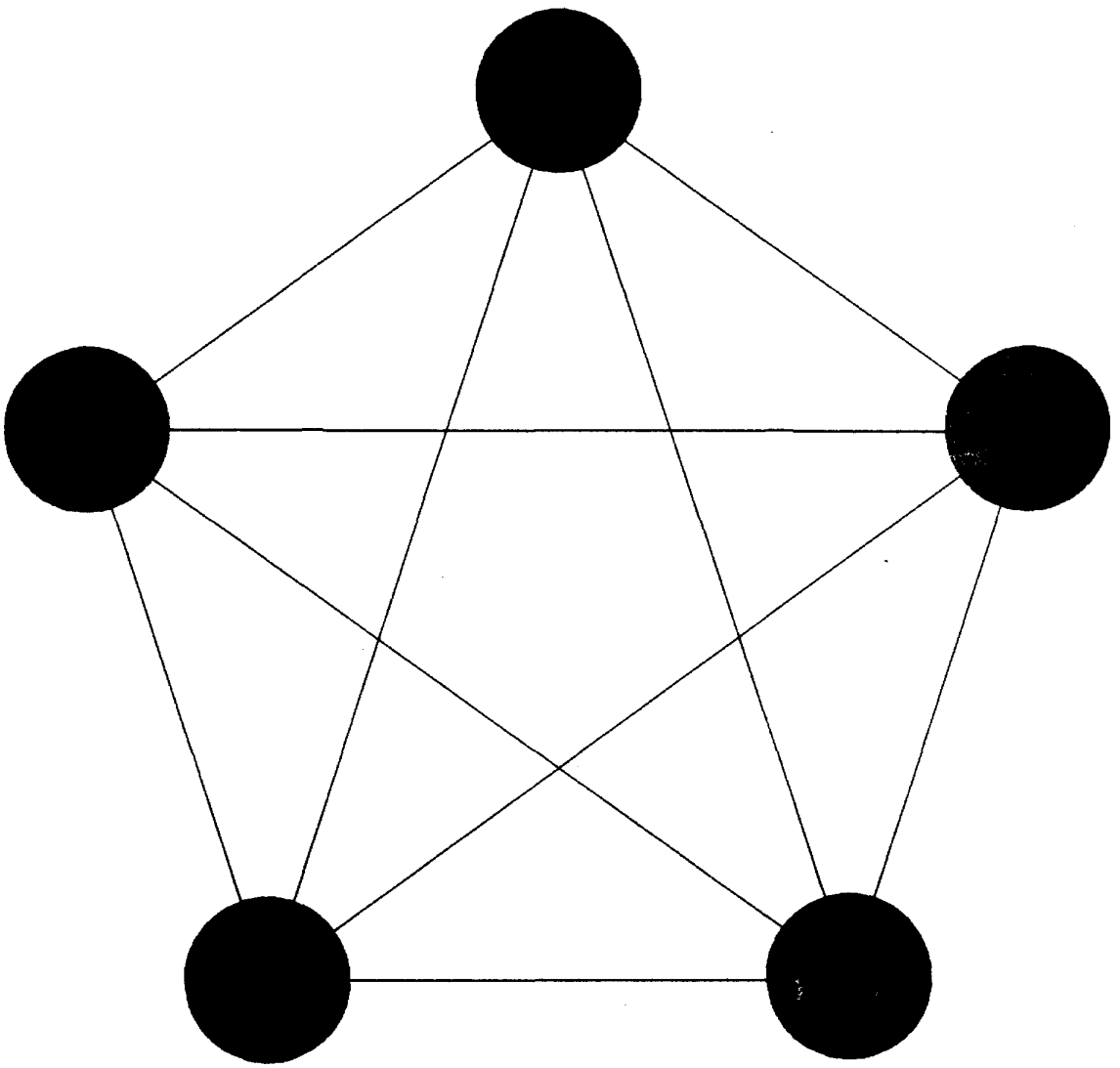
- Use of video recordings of actual plant performance as part of needs assessment
- The crew is trained as an integral group
- The crew management is included in the setting of goals for each session
- Video taped simulator session to allow practice in a "normal" setting
- The crew conducts a self-assessment of all video taped sessions

When we are part of a group



It is very difficult to change our behavior as an individual

Schematically
As the group learns new behaviors it adjusts and forms a new pattern



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