

## **Employee Selection As an Organizational Improvement Strategy**

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Over the last sixty years, applied psychologists and economists have documented the impact on organizational effectiveness from the use of various human resources practices (Brogden, 1949, Flamholtz, 1985, Steffy, 1988). Raju and Burke (1986) provided quantitative methods to calculate the impact on productivity from using valid selection procedures. A survey of the peer-reviewed literature indicates a surprisingly large effect — both in dollars and in return on investment — by replacing an existing employee selection process with a process that has greater accuracy (Schmidt, 1982).

Why such a large effect? The reason, Fitz-Enz (2000) argues, is that people occupy a key leverage point in organizational effectiveness:

Of all the variables in business, people are the only one with the inherent power to generate value. All other variables—cash and its cousin credit, materials, plant and equipment, and energy—offer only potential. By their nature, they are inert; and they cannot add anything until some human being, be it the lowest-level laborer, the most ingenious professional, or the loftiest executive, leverages that potential by putting it into play. (p. xii)

The amount of improved productivity depends on the productivity difference between good and poor performers. A number of researchers have attempted to quantify this difference and estimates range from 300% to 500% (Bobko, 1983). This is a really big difference, a lot bigger than most managers realize. To put it in context, many people consider a 10% gain in productivity worth bragging about. But, if you could change the ratio of good to poor performers in favor of the good performers, you could do a lot better. Productivity gains of 100% or more should be achievable.

How do you change the ratio of good performers to poor performers? The quickest method is to fire the poor performers. Sounds draconian, right? After all we're talking about employees that the organization regards as "acceptable." However, regularly removing the bottom ten percent of the performance distribution was a technique Jack Welch used to very good effect as he transformed GE into what many regard as the best-managed company in the world. Hard-nosed discipline like this is rare in any organization; but, if executed properly, it is very effective.

However, the focus here is on a different strategy, hiring instead of termination. Hiring isn't as fast as termination; but, over time, it produces the same impact (especially if you are willing to fire some of the very worst performers.) It takes resources and time to develop and implement an accurate hiring process; but the costs are trivial compared to the gains from hiring more good performers.

This paper describes a process that Doug Bailey and I created for hiring transmission system operators at TVA. This process, called an assessment center, was built using the same framework that I used to create a senior reactor operator assessment center for the nuclear power industry. The assessment center has proven to be an effective predictor of success in initial license training, and it is now used at eleven utilities to screen senior reactor operator candidates.

### **Step 1. Define the Requirements**

The first step is to define what is required to do a good job. Years ago, we called these requirements “KSA’s,” which stood for knowledge, skills, and abilities. Now, most people call them “competencies.” Regardless of the name, they are the human qualities that are needed to be able to perform well on a job. Identifying and defining job requirements takes some research. My technique is to observe people doing the job and interview incumbents, supervisors, managers, training staff, and human resources staff. My interviews focus on trying to understand what drives good performance and the human qualities that differentiate average from excellent performers.

Sometimes companies will skip this step, thinking that they already understand the requirements. Then they jump right into the details how to announce the job and who will do the interviews. However, the requirements form the foundation for everything that follows. If you don’t get a thorough, detailed understanding of what drives good job performance, the chances of designing an accurate selection process are pretty slim.

Figure 1 below shows the requirements that we developed for TVA’s transmission system operators. I organized the requirements into three categories: conceptual skills, motivation, and interpersonal skills. The bullet points underneath each define what the category includes. There are other possible categories, but I find that these three are useful for a variety of jobs. The bullet points include the specific details that change from job to job.

### **Figure 1. Transmission System Operator Requirements**

#### **1. Conceptual Ability**

- *Basic skills:* Able to read and understand, and apply standard operating procedures, regulations, and training materials. Able to apply operational and regulatory concepts to new situations. Proficient in math including ratios, basic algebra, and geometry.
- *Electrical transmission knowledge:* Has a practical understanding of electricity, equipment used in the field, the physical environment, and common work procedures.
- *Electrical aptitude:* Able to understand basic electrical concepts, schematics, flows, signals, and sequences.
- *Learning ability:* Quick to understand transmission operations and multiple sets of regulations (NERC, FERC, NAESB, and TVA). Able to quickly become proficient in TRO software systems.
- *Analysis and Problem Solving:* Understands data and patterns in data; identifies the most important variables and underlying causes; formulates possible solutions to problems and evaluates those solutions for accuracy and usefulness.
- *Awareness:* Ongoing awareness of the details of systems, operations, and people; knows what is going on; not prone to "mental vacations" or "tunnel vision." Able to look at the big picture and anticipate how a change in one thing might impact other aspects of the transmission system.

- *Multi-Tasking*: Adapts quickly to changes in events, processes, and priorities. Effectively moves from one task to another without confusion or forgetting what was going on.

## 2. Motivation

- *Commitment*: Willing to do what is necessary to complete training and become an effective operator. Takes duties seriously; checks to make sure things are correct; goes the extra mile to achieve high quality results.
- *Desire to learn*: Sense of curiosity about how things work; takes initiative for self-education opportunities; keeps up technically; willing to listen—doesn't "know it all."
- *Resilience*: Maintains a positive attitude, does not quit on problems—keeps trying until he or she has a solution; good tolerance for long hours, shift work, and stressful conditions. Makes good decisions under stressful conditions; does not freeze under pressure.
- *Proactive*: Takes the initiative to get things done, stays busy—does not wait to be told what to do; quick to see small problems and take corrective action before things get worse; makes suggestions and works to implement improvements. Has a sense of urgency.
- *Focus*: Strong self-discipline and concentration; not easily distracted or aggravated.
- *Systems perspective*: Has a “big picture” perspective of the transmission system and keeps this in mind as he or she works with specific problems and individual customers.
- *Preference for operator work*: Likes the challenge of keeping things running well. Interests, work preferences, and personality match well with the profile of people in an operator occupation.

## 3. Interpersonal skills

- *Effective verbal communications*: Clear speaker; listens well to others, can “read between the lines.” Communications are clear, straightforward, and put in terms that the listener can understand. At higher levels, works with others who may have different priorities to come to mutually beneficial agreements.
- *Effective Written Communications*: Log entries are clear and accurate. At higher levels, reports for management are accurate, concise, professionally written, and in terms that the intended audience can understand.
- *Independent*: Has high internal standards for performance; takes personal responsibility for operating the system safely. Willing to raise issues that may not be easy to address such as problems with customer conduct.
- *Team player*: Gives priority to team success over individual success; works with others as colleagues; participative—not dictatorial.
- *Easy to work with*: Reasonable, fair-minded, tolerant, understands and appreciates the needs and feelings of others.

- *Assertive*: Self-confident, task-centered, and persuasive. Able to defend decisions. Able to professionally handle angry, abusive callers and engage them in finding solutions to their problems.
- *Maturity*: Good self-control, emotionally stable, calm; takes responsibility for actions; does not blame others for problems. Not defensive, accepts feedback from others.
- *Leadership Potential*: Deals effectively with people, is looked to by others to be a leader, helps others to work well together, takes action to improve the performance of others.

## **Step 2. Measurement**

The second step is to figure out ways to measure applicants against the requirements. This is where an experienced industrial/organizational psychologist is very useful. Some managers think they can go to the Internet and download a few interview questions and a test and be done with it. However that is a prescription for disaster. There is no good housekeeping seal of approval for interview questions or employment tests. Anyone, regardless of qualifications, can put something on the Internet and claim it is “100% valid.” All kinds of bogus tests and interviews are out there, and you’ll need an experienced professional to help you identify those measures that have been carefully developed and vetted by peer-reviewed research.

While a broad review of measures that meet professional standards is beyond the scope of this article, I do have some examples. Written tests generally do the best job for conceptual skills. Our job analysis for transmission system operators told us that excellent performers quickly learned electrical transmission technology and were able to apply that knowledge to on the job problems. As it turns out, there are good quality electrical aptitude and knowledge tests available from the Ramsay Corporation in Pittsburgh, so we purchased them for our assessment process. Another required operator conceptual skill to be able to understand and apply NERC standards. Unfortunately, there isn’t a professionally developed NERC Standards reading test, so I created one using reading selections from the Standards. Reading comprehension tests tend to be the best predictor of performance in classroom training. This won’t surprise most trainers. If someone cannot read technical material when they apply for a job, they probably won’t be able to read technical material when they get into the classroom.

One can argue that having a technology degree would substitute for using the tests; and, in some cases, this is true. However, in the applicant screening business, one of the facts of life we have to deal with is that many applicants, regardless of qualifications, have reading skills that are somewhere around the sixth grade level. Why? Reading comprehension is like any ability. If it is not regularly exercised, it declines fairly quickly. The reading level of the NERC Standards is about the 12<sup>th</sup> grade level. So it is easy to see why someone reading at the 6<sup>th</sup> grade level has trouble passing the certification test.

For motivation and interpersonal skills, I like to use a structured interview and a personality test. If you’re not already using “structured interviews” (aka “behavioral interviews” or “targeted interviewing”), this is something you need to start doing. Employers not using structured interviews are at a competitive disadvantage when it comes

to finding the best candidates in the labor market. Structured interviews were developed in the mid 1970's and are based on the premise that the best predictor of future behavior is past behavior. This premise is accurate for adult human beings. We tend to be consistent in our work habits, achievement orientation, how we approach problems, and in how we interact with others.

In the structured interview, the interviewers ask applicants for samples of past behavior from work related situations. For example, "Have you ever made a suggestion to improve something? Tell me about it." The interviewers then use these samples of past behavior to make inferences about how the applicant would behave if he or she were to be hired. Plenty of peer-reviewed research has documented the validity of structured interviews (Motowidlo, 1999). They are a lot better than the old style interview where we asked questions like: "Tell me about your least favorite supervisor." Or "What job do you want to be in five years from now?"

For personality tests, I like the California Psychological Inventory. The CPI is a norm-based test that has been around for about fifty years. It has been vetted in peer-reviewed research and found to be a useful measure of everyday personality. Selecting a personality test requires some care. There are hundreds of personality tests, but only a few are appropriate to use in employee selection. For example, widely used tests like the Meyers-Briggs Type Indicator and the Disk Profile might seem like something useful for employee selection. However these two tests are built on an ipsative model of scoring. Ipsative means that the components of your personality are scored in relation to each other. For example you might be more extroverted than introverted. This is useful information for understanding your own personality or in team building. However, for measuring applicants against requirements (which is what is needed in employee selection), we want to know how much extroversion a person has. That requires a test like the CPI, that is built on a "normative" model and compares the applicant to the population in general or to another specified norm group.

Finally, for measuring an applicant's aptitude for operating a process, I like to use an operator simulation. It is the only good way I have found to see if someone can actually operate. By operate, I mean look at data, make timely, accurate decisions (based on the data), and keep a process operating within specified parameters. The simulation that I developed for hiring transmission operators required applicants to operate a water distribution utility. The utility has different suppliers with different cost structures and customer demand that varies from hour to hour. The applicant's job is to operate the utility for twenty-four hours and provide customers with water at the lowest cost to the utility.

### **The Selection Plan**

I organize the requirements and measurements in a grid called a "selection plan," and use the plan to make sure that I have measurements for all the requirements. Table 1 is the selection plan that we used at TVA. The requirements are in the left column and the measurements are in the top row. An "X" indicates where we get a measurement.

**Table 1. Selection Plan for Transmission System Operators**

Requirements	Electrical aptitude test	Electrical knowledge test	Abstract reasoning test	Reading comprehension test	Math test	Interview	Vocational interest test	Personality test	Simulation And Writing Test
<b>Conceptual Ability</b>									
Basic skills				X	X				
Electrical aptitude	X		X	X					
Electrical knowledge		X				X			
Learning ability	X	X	X	X	X				
Analysis and Problem Solving			X						X
Awareness						X			X
Multi-tasking			X			X			X
<b>Motivation</b>									
Commitment						X		X	
Desire to learn						X	X		
Resilience						X		X	X
Proactive						X		X	X
Focus								X	X
Preference for Operator Work							X	X	X
<b>Interpersonal skills</b>									
Effective communicator - verbal						X	X	X	
Effective communicator - written									X
Independent						X		X	
Team player						X	X	X	
Easy to work with						X	X	X	
Assertiveness						X	X		
Maturity						X		X	X
Leadership potential						X	X	X	

One of the things you may notice is that there is than one measure for most of the requirements. I do this because the measures used in employee selection are relatively imprecise (compared to the kinds of measures you are used to using in electrical transmission). I'm more comfortable in making inferences about an applicant's qualities, if I have two or three measures that are in agreement.

### **Validation**

The final step in the development of a selection process is to see if it works. One way to do this is to give the assessment to employees who are in the job and compare their assessment scores to their job performance. Industrial/Organizational psychologists call this step "validation." At TVA, the twenty-seven incumbent transmission system operators were assessed. Then Doug and his supervisors rated the operators on the following five factors.

1. Conceptual Ability
2. Motivation
3. Interpersonal Skills
4. Overall Job Performance
5. Potential to Advance

The first three factors are from the three requirements for excellent performance. Factors 4 and 5 are more general, an overall rating of job performance and a rating of the employee's potential to advance. The rating process I used was different from what most organizations use for performance appraisal. Ordinary performance appraisal ratings are influenced by a number of factors that have little to do with the employees' performance. The biggest of these factors is whether your boss is a strict or lenient rater. In addition, performance appraisal ratings tend to get bunched up towards the high end of the scale, everybody is above average. As a result, the ratings really don't differentiate among employees. Instead of using this type of rating, I asked the three TVA managers to separately list their top five and bottom five employees for each of the rating factors. Supervisors can do this type of rating quickly and with excellent consistency. When the ratings from the three managers are combined, the scores of the operators form a ten-point rating scale that spreads out into a nice normal curve.

This performance rating process may not sound like a big deal, but it is. Skewed ratings with little variability are poison for statistical analysis, and statistics are what we use to calculate validity. The better you can spread people out in the performance rating process, the better chance you have of seeing how well the selection measures work for predicting performance.

Table 2 shows how the assessment scores compare to job performance. The assessment score range is from a minimum of 3 to a maximum of 12, with the average being about 7.5. I separated the twenty-seven employees into three performance groups, top, middle, and bottom; and I also separated them into three groups based on their total assessment score. The employees with high assessment scores tend to be in the top and middle performance groups, and the employees with low assessment scores tend to be in the bottom performance group.

**Table 2. Comparison of Total Assessment Scores with Job Performance**

Total Assessment Score	Performance			Total
	Top	Middle	Bottom	
Score of 8 and above	5	4	1	10
Score of 7 to 7.999	5	2	2	9
Score below 7	1	2	5	8
Total	11	8	8	27

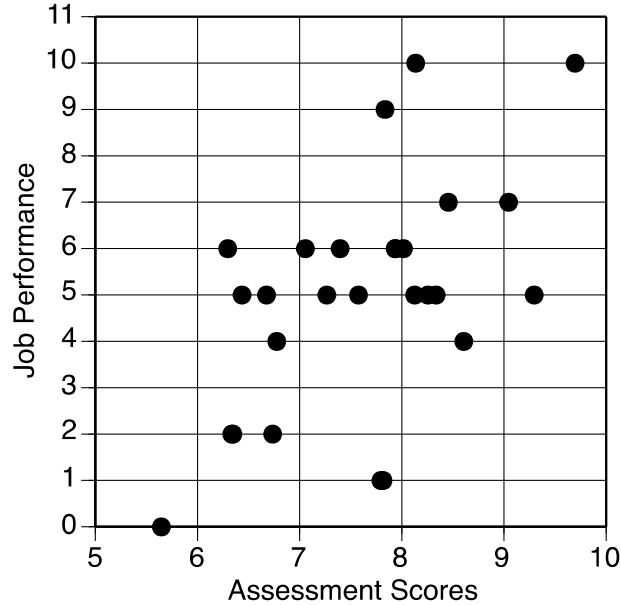
With this kind of relationship between assessment scores and job performance, it is possible to set a cut score that would be useful in the selection process. For example, if we were to pretend that these twenty-seven employees were applicants and use a cut off score of 7, we would have selected ten of the top eleven performers; and we would have eliminated five of the eight bottom performers. In the hiring business, this is good accuracy. Using this cut score in hiring would create a filter that selectively favors the applicants who would become good performers and selectively eliminates applicants who would become poor performers. With continued use of the hiring process, the proportion of top performers would increase and the proportion of bottom performers would decrease. If you are managing a group of transmission system operators, this is exactly what you want; and it is money in the bank for improving the performance of your organization.

Figure 2 is a scatter plot that shows the correlation between the total assessment score and overall job performance. The correlation coefficient represented by the scatterplot is 0.55, which, in the employee screening business, is very strong. The typical correlation is about 0.30.

Looking at the three requirement scores (conceptual ability, motivation, and interpersonal skills), conceptual ability had the strongest pattern of correlation with the five performance ratings. Motivation had the strongest correlation with having the potential to advance ( $r = 0.52$ ). Interpersonal skills correlated with the performance rating of interpersonal skills ( $r = 0.35$ ) and with the potential to advance, ( $r = 0.40$ ).



**Figure 2. Correlation with Performance**



Looking at the individual written tests, they also had significant correlations with job performance. The strongest,  $r = 0.487$ , was for the electrical aptitude test. The reading comprehension test had the strongest correlation with the ratings for potential to advance ( $r = 0.431$ ).

The vocational interest and personality tests yielded a distinctive profile for people in the operator occupation. For the personality test, I used the California Psychological Inventory (described above in the Measurement section). It is a measure of “every day personality” (not psychopathology). It attempts to describe what someone would be like if you were to work with them for a few months. Attachment 1 contains the CPI scales and their definitions.

For vocational interest, I use the Strong Interest Inventory (SII). The SII compares your likes and dislikes to those of people in many common occupations. Vocational counselors use it to help people identify the kinds of jobs in which they would be most satisfied. The SII also contains scales for Holland’s Occupational Themes. The Themes classify work into six general areas (realistic, investigative, conventional, enterprising, artistic, and social). The six areas are described in detail in Attachment 2. Research supports using Holland’s Occupational Themes to determine how well applicant preferences match what an occupation has to offer (Rottinghaus, 2009). If the applicant matches the occupation, then the applicant tends to find the job more satisfying and tends to stay longer in the job.

Finally, the SII also contains Work Preference Scales, which measures the ways that people prefer to work. For example, do you prefer to work with things or with people? A complete description of these scales appears in Attachment 3. The logic for using the Work Preference Scale is the same as with using Holland’s Occupational Themes, namely to discover if there was a distinctive profile for transmission system operators.

Table 3 presents the results for the CPI personality test. It compares operator scores with the norms for people in the general population. (Attachment 1 contains the full definition for the CPI

scales.) The scales identified in this table all have at least one standard deviation difference between the operator mean and the mean of the general population norms. In the behavioral sciences, this is a really big difference (or “effect size”). The CPI scales with differences smaller than one standard deviation are omitted from the table. All the differences except one are positive, meaning that the operators have more of the trait than the general population.

The one exception, where the difference is negative, is for the scale of Sensitivity. The high end of sensitivity is defined as: “Sensitive to others’ feelings, tends to interpret events from a personal perspective, often feels vulnerable, has a strong need for affiliation.” The low end of the scale is: “Tough-minded, action oriented, somewhat insensitive to others’ feelings, aggressive.” Transmission system operators are at the low end of this scale, much like process operators in other industries.

For Holland’s Occupational Themes, there was only one theme with a big difference from the general population (2.5 standard deviation units), and that was Realistic. Realistic individuals are “active, stable and enjoy hands-on or manual activities such as repairing, building, mechanics, machinery operation, and athletics.” The Investigative theme came very close to meeting our criteria (.87 standard deviation units). Investigative individuals are “analytical, intellectual and observant, and enjoy research, mathematical or scientific activities. They are drawn to abstract challenges. People who fall into this theme enjoy using logic and solving highly complex problems.”

There were two Work Preference scales that met our criteria of at least one standard deviation difference from the general population norm group. The scale with the biggest difference is “Prudent Versus Risk Taking,” where operators tend to be on the Risk Taking side. Risk taking is described as: “Likes risk taking; appreciates original ideas; enjoys thrilling activities and taking chances; makes quick decisions.” The other scale is “Things Versus People,” where operators tend to be on the Things side, which is described as: “Prefers working alone; enjoys data, ideas, or things; reserved.”

**Table 3. Operator Profile on the California Psychological Inventory**

CPI Scales	Population	TSO Mean Score	Difference from Population Mean in Standard Deviation Units
Leadership	50.00	61.00	1.90
Management Potential	50.00	61.70	1.89
Achievement via Independence	50.00	59.15	1.83
Law Enforcement Orientation	50.00	67.56	1.74
Independence	50.00	59.04	1.71
Sensitivity	50.00	38.56	-1.70
Achievement via Conformance	50.00	58.67	1.50
Insightfulness	50.00	59.96	1.45
Conceptual Fluency	50.00	57.93	1.30
Dominance	50.00	58.07	1.23
Work Orientation	50.00	59.89	1.21
Good Impression	50.00	60.04	1.12
Self-Control	50.00	60.22	1.09
Social Conformity	50.00	57.26	1.08
Tolerance	50.00	59.78	1.06

Essentially, the operator personality profile is of someone who:

- Likes being in positions of responsibility
- Is able to handle pressure and stress
- Is assertive and effective dealing with people
- Is comfortable with rules and regulations
- Is tough minded and willing to stick up for his or her views
- Has a strong desire for achievement
- Has good self-discipline and control over emotions
- Is a steady worker
- Is open minded and respectful of the rights of others

### Reporting Results

All in all, we collected sixty-four separate scores on each of the operators. This is a lot of information to try to use in a selection process. To make it user-friendly, I consolidated the scores into scores on the three requirements and the twenty-two sub-requirements listed in Figure 1. Table 4 shows an example of scores for one of the operators, who we re-named John Doe. We also provided a narrative report for Mr. Doe. For the tryout, the narrative report was written as if it were an actual selection report. Mr. Doe’s narrative report reads as follows.

In conceptual ability, Mr. Doe is above average, with a significantly above average score in electrical knowledge; and with above average scores in electrical aptitude, learning ability, troubleshooting capability, responsiveness, awareness, and abstract reasoning. He has

below average scores in reading comprehension and math. In motivation, Mr. Doe is below average, with below average scores in commitment and systems perspective; and with a significantly below average score in focus. In interpersonal skills, Mr. Doe is below average, with below average scores in being easy to work with and maturity; and with significantly below average scores in being an effective communicator, being a team player, assertiveness, and leadership potential. *Mr. Doe is below our 7.5 total score cut off, and he is below our 2.0 cut off for interpersonal skills. He is significantly below average in the critical skill of being an effective communicator. He is not recommended for selection as a transmission system operator.*

**Table 4. Assessment Center Score Report**

	Doe, John
<b>Conceptual Ability Mean</b>	<b>2.9</b>
Basic Skills	2.0
Electrical knowledge	4.0
Electrical Aptitude	3.0
Learning Ability	2.8
Troubleshooting capability	3.0
Responsiveness	3.0
Awareness	3.0
Adaptable	2.7
<b>Motivation Mean</b>	<b>2.3</b>
Commitment	2.0
Desire to Learn	2.5
Resilient	2.5
Proactive	2.7
Focus	1.6
System Perspective	2.0
Preference for operator work	2.5
<b>Interpersonal Skills Mean</b>	<b>1.9</b>
Effective communicator	1.5
Independent	2.5
Team player	1.8
Easy to work with	2.0
Assertive	1.7
Maturity	2.0
Leadership Potential	1.7
<b>Total Score</b>	<b>7.05</b>

### **Use of the Assessment Process**

Because the validity study had positive results, TVA decided to use the assessment center in July 2012 to evaluate twenty-three applicants for an operator-training program. To make the assessment process more efficient, we split the assessment into two parts, screening and assessment. The screening part used the CPI and the SII, which are administered over the Internet, to compare the twenty-three applicants to the operator personality and work preference profiles. TVA then asked the top twelve applicants to come to Chattanooga for the full assessment center. Based on the assessment center results, five candidates were selected for the operator training class.

The class is not over yet, so we don't have any final results. However, the lead trainer noted that this was a "Really sharp group." The trainees passed all the exams during training, and they all passed the NERC certification exam on the first try.

### **EEO Considerations**

One worry that managers and HR departments may have with the use of an assessment process is the possibility of a Title VII (EEO) complaint. Obviously there is no perfect insulation against such a complaint, whether you use an assessment center or written tests or an informal interview. Disappointed candidates may want to bring suit; and, if they can find an interested attorney, you'll have a legal complaint.

However, there are three reasons why I believe this worry is overstated. The first reason is that formal legal complaints are quite rare. I was responsible for internal promotion processes for the Internal Revenue Service from 1972 to 1981; and, during that time, there were no formal complaints against any of the promotion actions. I was responsible for all selection and promotion processes at J.C. Penney from 1982 to 1987; and, during that time, there were no formal complaints about any of the selection and promotion actions. Since 1987, I've been developing selection processes for all kinds of organizations; and, during that time, no formal complaints have been filed about any of the selection actions. Since 2004, my company has screened over 1000 senior reactor operator candidates; and, during that time, no formal complaints have been filed about any of these selection actions.

Second, assessment centers, because of the variety of measurements they include, have less adverse impact against minority groups than do written tests. Schmitt and Noe (1986, p. 86) state, "Published work indicates that the use of the assessment center technique does not adversely affect the hiring rate of minority group individuals."

Third, my selection processes are developed to be in compliance with the EEOC's Uniform Guidelines on Employee Selection Procedures. This includes conducting a job analysis to define the requirements and providing empirical evidence that the assessment center is valid and job related. Thus, even if a procedure were to be challenged, it could be defended by using the EEOC's own enforcement guidelines.

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### Attachment 1: California Psychological Inventory Scales

	<b>Low Scores (40 to 20)</b>	<b>High Scores (60 to 80)</b>
Dominance (Do)	Not assertive, uncomfortable exerting authority, hesitant in making decisions, unassuming in behavior.	Likes to be in charge, self-confident, persuasive, task-centered
Capacity for Status (Cs)	Unsure of self, dislikes direct competition, not looking for major responsibilities or status, often feels that life is unfair.	Ambitious, wants to be a success, likes the good life, outgoing, has a wide range of interests.
Sociability (Sy)	Not gregarious, prefers to stay in the background, feels uneasy in many social situations, avoids making decisions, keeps people at a distance.	Highly sociable and drawn towards people, enjoys meeting new people and being in new situations, optimistic, socially competent.
Social Presence (Sp)	Cautious, does not seek attention, appears somewhat inhibited, has a readiness to feel guilty.	Seeks social attention and recognition, likes to play to an audience, spontaneous, witty, not easily embarrassed
Self-acceptance (Sa)	Blames self when things go wrong, often thinks others are better, has doubts about own ability, tends to withdraw from social contact.	Confident, self-assured, presents self with conviction, likes to talk, projects high sense of own personal worth
Independence (In)	Seeks support from others, defers to others, avoids taking a stand, tends to give up when things go wrong.	Has a strong sense of self-sufficiency, resourceful, keeps a certain distance between self and others, resolute
Empathy (Em)	Not good at judging other people, somewhat withdrawn, uncomfortable with change and uncertainty, often feels misunderstood.	Likeable, understands the feelings of others, versatile, adventurous, has good social skills.
Responsibility (Re)	Somewhat indifferent to duties and obligations, dislikes routine work, tends to be careless, often impatient.	Conscientious, takes duties seriously, considerate of others, reliable—gets things done
Social Conformity (So)	Not readily accepting of social rules and conventions, questions authority, tends to blame others when things go wrong, easily annoyed or irritated.	Comfortably accepts ordinary rules and conventions, finds it easy to conform, favors traditional methods and ideas
Self-control (Sc)	Willing to take risks, has strong feelings and emotions, speaks out when angry or annoyed, may leap before looking.	Pauses for thought before acting, tries to control emotions and temper, takes pride in being self-disciplined, cautious

Good Impression (Gi)	Not very much concerned about image presented to others, skeptical, frank, may be individualistic.	Careful to present a favorable image to others, deferential to those in authority, complies with rules of polite behavior
Communality (Cm)	Has many unusual responses, personal preferences and ideas differ from those of others, may have answered the questions carelessly.	Has very few unusual responses, sees self as essentially similar to others, has a practical outlook
Well-being (Wb)	Not entirely comfortable in current situation, may be worried about health and personal problems, tends to be anxious, not optimistic about the future.	Generally satisfied with life situation, cheerful, feels self to be in good physical and emotional health, feels competent to deal with life's demands
Tolerance (To)	Tends to be critical of others' beliefs and opinions, may appear self-centered and resentful of the good fortune of others, feels unappreciated.	Open-minded, reasonable, respectful of the rights and beliefs of others, not biased or dogmatic.
Achievement via Conformance (Ac)	Has difficulty doing best work in highly structured and regulated settings, does not like to conform, tends to be an underachiever.	Strongly motivated to achieve particularly in clearly defined and structured settings, goal-oriented, has efficient work habits.
Achievement via Independence (Ai)	Has difficulty doing best work in situations that are vague and unstructured, wants others to specify goals and methods, has a low level of initiative.	Strongly motivated to achieve, particularly in open and fluid situations, prefers work allowing for initiative and independent thinking, good at defining personal goals
Conceptual Fluency (Cf)	Activity-oriented, prefers dealing with tangible matters rather than concepts or abstractions, lacks confidence in own ability, has limited interests.	Comfortable and confident in handling intellectual and conceptual matters, verbally fluent, thinks ahead.
Insightfulness (Is)	Has difficulty predicting how others will feel and react, not very interested in the dynamics of behavior, looks more at what people do than at what they think.	Has analytic insight into people and their motivations, forms impressions quickly, not always warm or sympathetic.
Flexibility (Fx)	Prefers predictability and consistency, uncomfortable with ambiguity, programmed and planful, well-organized.	Likes change and variety, finds ordinary routine boring, quick-thinking and clever.
Sensitivity (Sn)	Tough-minded, action oriented, somewhat insensitive to others' feelings, aggressive.	Sensitive to others' feelings, tends to interpret events from a personal perspective, often feels vulnerable, has a strong need for affiliation.



Managerial Potential (Mp)	Not very ambitious, may be erratic in decision-making, puts own interests first, reacts defensively to criticism.	Deals effectively with people, shares credit with others, good at explaining decisions, has good judgment.
Work Orientation (Wo)	Restless, distractible, often careless, not a steady worker, has fluctuating moods.	Reliable worker, readily accepts subordinate roles, not self-seeking, has modest aspirations, seldom complains.
Creative Temperament (Ct)	Prudent, avoids risk, prefers the traditional ways of doing things, dependable at work.	Likes what is new and different, thinks in unconventional ways, likes to think "outside the box," has a rapid personal tempo.
Leadership (Lp)	Avoids positions of leadership, low in persistence, doubts own competence, has trouble dealing with stress.	Has good leadership skills, likes to take positions of leadership, deals effectively with stress and pressure, forceful and self-assured
Amicability (Ami)	Impatient, not tactful, questions the motives of others, easily annoyed, not a team worker.	Cooperative, appreciative of others, not assertive or aggressive, tries hard to get along well with coworkers, not self-seeking or self-promoting
Law Enforcement Orientation (Leo)	Sees law enforcement practices as too strict and severe, likes to take chances, tends to be nonconforming, somewhat pessimistic and dissatisfied.	Supports firm and strict law enforcement practices, well-suited for work in the law enforcement field, evaluates problems from a practical and commonsense standpoint.

## **Attachment 2: Holland's Occupational Themes**

### **REALISTIC (R)**

Realistic individuals are often active, stable and enjoy hands-on or manual activities such as repairing, building, mechanics, machinery operation and athletics. They often prefer to work with things rather than ideas and people. They enjoy engaging in physical activity and like being outdoors and working with plants and animals. People who fall into this theme generally prefer to “learn by doing” in a practical, task oriented setting, as opposed to spending extended periods of time in a classroom. They perceive themselves as skilled in mechanical and physical activities. The preferred work environment of the realistic type fosters technical competencies and work that allows them to produce tangible results. Typical realistic careers include those in the trades, athletics, military and protective services, working with animals and/or plants, and working outdoors.

### **INVESTIGATIVE (I)**

Investigative individuals are often analytical, intellectual and observant, and enjoy research, mathematical or scientific activities. They are drawn to abstract challenges. People who fall into this theme enjoy using logic and solving highly complex problems. They place a high value on science and learning, and perceive themselves as scholarly and having scientific or mathematical ability. The preferred work environment of the investigative type encourages scientific competencies, allows independent work and focuses on solving abstract, complex problems in original ways. Typical investigative careers include medical technologist, biologist, chemist, systems analyst, scientist, mathematician, doctor and other medical professions.

### **ARTISTIC (A)**

Artistic individuals are often original, intuitive and imaginative, and enjoy creative activities such as composing or playing music, writing, drawing or painting, and acting in or directing stage productions. They seek opportunities for self-expression through artistic creation. People who fall into this category prefer flexibility and are comfortable with ambiguity, and have an aversion to convention and conformity. They value aesthetics, and view themselves as creative, non-conforming and as appreciating or possessing musical, dramatic, artistic or writing abilities. The preferred work environment of the artistic type fosters creative competencies and encourages originality and use of the imagination in a flexible, unstructured setting. Typical artistic careers include musician, reporter, graphic artist, decorator and culinary arts.

### **SOCIAL (S)**

Social individuals are often humanistic, idealistic and concerned with the welfare of others. They enjoy helping, training, counseling or developing others. They are generally focused on human relationships and interpersonal dynamics. Social types seek opportunities to work as part of a team, solve problems through discussions and utilize interpersonal skills. Because they genuinely enjoy working with people, they communicate a warm and tactful manner. They view themselves as understanding, helpful and skilled in teaching. The preferred work environment of the social type encourages teamwork and allows for significant interaction with others. Typical social careers include teacher, counselor, social worker, minister, social scientist and human resources professional.

### **ENTERPRISING (E)**

Enterprising individuals are often energetic, ambitious, adventurous, sociable and self-confident. They enjoy activities that require them to persuade others, such as sales and marketing, and seek out leadership roles. They are invigorated in using their interpersonal, leadership and persuasive abilities to obtain organizational goals or economic gain. They are often effective public speakers and are generally sociable. They view themselves as assertive, self-confident and skilled in leadership and public speaking. The preferred work environment of the enterprising theme encourages them to engage in activities such as leadership, management and sales, politics, marketing and rewards them through the attainment of money, power and status. Typical enterprising careers include sales, marketing, politics and business.

### **CONVENTIONAL (C)**

Conventional individuals are often efficient, careful, organized and conscientious. They are comfortable working within an established chain of command and prefer carrying out well-defined instructions. They prefer organized, systematic activities and have an aversion to ambiguity. They are skilled in and often enjoy maintaining and manipulating data, organizing schedules and operating office equipment. They are thorough, persistent and reliable. Conventional types view themselves as responsible, orderly, efficient and possessing administrative, organizational and numerical abilities. The preferred work environment of the conventional theme fosters organizational competencies such as record keeping and data management in a structured operation. Typical conventional careers include administrative assistant, accountant, bookkeeper, copy editor, home/closet organizer, information technologist, health information specialist, and office manager.

### Attachment 3: Work Preference Scale

The Work Preference Scales describe the ways a person prefers to work. For example, some people prefer working with things and others prefer working with people. The five scales are described below.

#### Work Preference

	<b>Low</b>	<b>High</b>
<b>Style</b>	Prefers working alone; enjoys data, ideas, or things; reserved.	Prefers working with people; enjoys helping others; outgoing.
<b>Learning</b>	Prefers practical learning environments; learns by doing; prefers short-term training to achieve a specific goal or skill.	Prefers academic environments; learns through lectures and books; willing to spend many years in school; seeks knowledge for its own sake.
<b>Leadership</b>	Is not comfortable taking charge of others; prefers to do the job rather than direct others; may lead by example rather than by giving directions.	Is comfortable taking charge of and motivating others; prefers directing others to doing the job alone; enjoys initiating action; expresses opinions easily.
<b>Risk Taking</b>	Dislikes risk taking; likes quiet activities; prefers to play it safe; makes careful decisions.	Likes risk taking; appreciates original ideas; enjoys thrilling activities and taking chances; makes quick decisions.
<b>Team Orientation</b>	Prefers accomplishing tasks independently; enjoys role as independent contributor; likes to solve problems on one's own.	Prefers working on teams; enjoys collaborating on team goals; likes problem solving with others.