U.S.NRC
United States Nuclear Regulatory Commission
Protecting people and the environment

A Journey to Your Future

Make Discovering Your Career an Adventure

A Journey to Your Future

Make Discovering Your Career an Adventure

U.S. Nuclear Regulatory Commission
Leadership Potential Program Class of 2010

Designed by John Orban and Eric Goss

Abstract

The U.S. Nuclear Regulatory Commission's Leadership Potential Program Class of 2010 presents, "A Journey to Your Future: Make Discovering Your Career an Adventure." The Leadership Potential Program Class created this book for middle school students as a resource to help with one of life's most challenging decisions—the choice of a career. This book provides information about careers, including educational requirements, types of work performed, and the impact of that work on the lives of others. The book is lighthearted, yet thought-provoking; imaginative, yet informative.

Comments and/or suggestions on the information presented are welcomed and may be sent to the Director, Office of Small Business and Civil Rights, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

Contents

Abstract iii

Acknowledgements vii

What Do You Want To Be? 1

Chapter 1: Accountants and Budget Analysts 3

Chapter 2: Administrative Support Staff 9

Chapter 3: Engineers 13

Chapter 4: Lawyers 19

Chapter 5: Information Technology Professionals . .23

Chapter 6: Investigators 27

Chapter 7: Scientists 33

Chapter 8: Security Specialists and Safeguards Analysts 39

Conclusion 45

About the Authors 47

Acknowledgements

The Leadership Potential Program (LPP) Class of 2010 gratefully acknowledges the significant contributions of the U.S. Nuclear Regulatory Commission (NRC). We offer a special thanks to Chris Barry, 2010 LPP facilitator, for his leadership, guidance, and tremendous effort to make the 2010 program a meaningful and worthwhile experience. We thank NRC senior managers who, through their leadership briefs, shared their wisdom and best practices for achieving the NRC's mission and upholding its values. We also give a special thanks to Marsha Gamberoni, 2010 LPP mentor, and to the NRC Offices of Administration and Small Business and Civil Rights for their unwavering support while we were developing, designing, and implementing this project.

Acknowledgements

Front row L-R: Mary Spencer, Jason Shay, June Cai, Leslie Terry
Back row L-R: Kala Shankar, David Jones, Sandra Valencia

Front row L-R: Doug Broaddus, Colleen Todd, Dori Votolato
Back row L-R: Robert K. Johnson, Chris Barry, Kevin O'Sullivan, Gilly Martin

Front row L-R: Undine Shoop, Shana Helton, Florine Williams, Brian Doan
Back row L-R: Ray Kellar, Anthony Ulses, Ken Lambert

Front row L-R: Patricia Adelstine, Jason Dreisbach, Jeanne Dempsey, Brooke Smith, Yoira Diaz-Sanabria
Back row L-R: Eric Oesterle, Michael McCoppin, Christopher Cook

What Do You Want To Be?

What Do You Want To Be?

"What do you want to be when you grow up?" How many times have you been asked this question? How many times has the answer changed? How do you find the one career that is right for you?

Finding a career that appeals to you and builds on your strengths can be like going on a journey. This adventure may guide you to a future as a leader. Or it may guide you to exciting work in science or engineering. Whatever career path you choose, we hope this book will make the journey easier, exciting, and worthwhile.

"A Journey to Your Future: Make Discovering Your Career an Adventure" focuses on the careers you can find at the U.S. Nuclear Regulatory Commission. The many exciting jobs here are the ones that we know the best. Most of us took a while to decide what we wanted to do because we weren't sure which careers would use our strengths. Some of us spent years training for our career because halfway through studying for one career we found that it wasn't something that we really liked. Sometimes we weren't sure what we needed to do to prepare for the career we wanted. We developed this book because we wish we had a road map back then to help us discover our future career.

So now the question becomes this:
Which career will you choose?

What do accountants and budget analysts do?

What Do Accountants and Budget Analysts Do?

Accountants analyze and track the way people and organizations earn and spend money. An accountant follows special rules ("financial rules") and uses special tools to keep track of money. Some accountants review financial reports to find out if people or organizations followed the rules when they spent and earned money. Other accountants try to figure out the best ways to use computers and spreadsheets so that it is easy to keep track of money.

Accountants help people and businesses figure out how much money they must pay in taxes. There are many special rules that accountants must know to figure out ("calculate") how much money is owed in taxes.

Accountants write detailed reports about money earned or spent. These reports sometimes describe patterns that are good or bad. Accountants try to figure out how to continue good patterns and change bad patterns.

Budget analysts help organizations plan how to spend money. Budget analysts develop reports that request money ("funding") so that a business has the money to do the work it needs to do. A budget analyst has to figure out how much money will be earned, and how much money will be spent. A budget analyst makes sure businesses do not spend more than they have. Budget analysts have to give good reasons ("justifications") when they ask for money. These justifications describe the purpose of the job, how long it will take to complete the job,

and how many people are needed to complete the job. A budget analyst also decides how important each job is, and whether money is available. Budget analysts make sure that businesses spend money correctly—how, when, and where.

What Do Accountants and Budget Analysts Do at the NRC?

At the NRC, accountants keep track of how the NRC spends its money. This is a very hard job because the NRC gets money from many different places. The NRC needs money to inspect nuclear plants to make sure they are safe. The NRC also needs money to review new plant designs. Finally, the NRC needs money so that all of its workers can do their jobs.

Accountants at the NRC make sure employees follow financial rules for keeping track of money. It is important for the NRC to tell the public how taxpayers' money was spent. Government accountants track money during the current year and develop budgets for the next 2 years.

At the NRC, budget analysts put together ("formulate") the budget for the agency. There are many different offices within the NRC, and most offices have individual budgets. Budget analysts located throughout offices within the agency combine each of the office budgets into one larger budget. Budgets tell the work the NRC needs to do, the cost to do a job, and the number of people needed to complete the job. This is part of the NRC budget process.

Because of the large amounts of money needed to operate the agency, accountants and budget analysts have to be honest and trustworthy.

How Do I Become an Accountant or Budget Analyst?

To become an accountant or a budget analyst, you will need to go to college to study accounting and financial management—learning how to keep track of how people earn and spend money, and learning the financial rules that people and businesses have

to follow. Accountants and budget analysts work with numbers, so you need to be good at math and problem solving. Some accountants also take a test to become a Certified Public Accountant (CPA). Becoming a CPA shows your commitment to using accounting principles in a fair and just manner.

If you want to work at the NRC, you need to have a security clearance. Getting a security clearance involves getting a background check. During the background check, government officials check to see if you have ever done anything illegal, abused drugs or alcohol, or made serious mistakes with money.

How Does the Work of an Accountant or Budget Analyst Affect Others?

At the NRC, accountants and budget analysts help other people do their work by making sure that they have the money and people they need. Accountants and budget analysts develop work estimates and analyze spending so that work does not have to be stopped because there's no more money left. Budget analysts help people explain why money is needed for a job.

Where Else Do Accountants or Budget Analysts Work?

Accountants and budget analysts work in many businesses and government agencies. Some accountants own their own business. Many budget analysts work in government agencies because of the need to track how taxpayer money is spent. Accountants and budget analysts work mostly in offices. Because of computers, email, and the Internet, some accountants work from home.

Where Do I Go for More Information?

For more information about accountants, go to:
http://www.bls.gov/oco/ocos001.htm
For more information about budget analysts, go to:
http://www.bls.gov/oco/ocos003.htm

What does the administrative staff do at the NRC?

What Does the Administrative Staff Do?

People who are part of the administrative staff do many different things and play many roles. Some people work as human resources specialists. They help hire and train new employees and help keep employees happy in the workplace. Management analysts collect and study information in order to make recommendations to supervisors. Some are administrative assistants (sometimes called "secretaries"). They type letters and reports, maintain files, schedule appointments, and keep track of time and attendance records.

What Does the Administrative Staff Do at the NRC?

Human resources specialists at the NRC make sure new employees know what their job is and get paid. They also help supervisors hire new people and get along with their employees. Sometimes this means giving advice about how to help an employee who isn't doing a good job. Human resources specialists at the NRC are important employees who are trained to solve problems between people. They understand the laws and rules about how a boss should treat his or her employees and also how employees should behave while at work.

Management analysts are the people who keep track of tasks, documents, contracts, and other important things within the NRC. They also work with accountants to help develop the budget. Management analysts sometimes work with

computers to help keep track of work and money. Management analysts help supervisors stay on top of all the work that needs to get done.

Administrative assistants at the NRC type letters and reports and prepare documents for approval by the supervisors. They are responsible for scheduling meetings, keeping track of important documents, and answering and forwarding phone calls. Administrative assistants at the NRC are usually responsible for keeping track of attendance for each employee in the organization.

How Do I Become an Administrative Staff Member?

Human resources specialists interact with many people every day, so you need to have good communication skills and to be a “people person.” You may consider taking college courses on how people behave, how a business operates, and psychology. If you follow this career path, you will have access to personal, personnel, and confidential information, so you must behave with integrity.

To be a management analyst, you should consider taking college courses in business, accounting, economics, statistics, or engineering. It will also be very important for you to be self-motivated and to be able to work on your own, without a lot of supervision.

If you are interested in being an administrative assistant, you will need to have excellent people skills because this job requires you to talk to people at different levels of the NRC.

You will need to be very organized and able to juggle many tasks at the same time.

If you want to work at the NRC, you need to have a security clearance. Getting a security clearance involves getting a background check. During the background check, government officials check to see if you have ever done anything illegal, abused drugs or alcohol, or made serious mistakes with money.

How Does the Work of the Administrative Staff Affect Others?

The administrative staff affect other people in very direct ways. Human resources specialists help new employees get acquainted with the NRC and guide them throughout their careers. They also help employees and supervisors work through problems. Management analysts help decide what work will be performed. They may also request information from other people in the NRC and help track tasks, documents, and contracts.

Administrative assistants constantly interact with people. They schedule meetings, type memos, and file documents. They help people get work done and get products distributed.

Where Else Does Administrative Staff Work?

Human resources specialists, management analysts, and administrative assistants support the day-to-day workings of businesses and agencies everywhere in the world.

Where Do I Go for More Information?

Administrative assistant, go to:
http://www.bls.gov/oco/ocos151.htm
Human resources specialist, go to:
http://www.bls.gov/oco/ocos021.htm
Management analyst, go to:
http://www.bls.gov/oco/ocos019.htm

What Do Engineers Do?

Engineers build and operate things like cars, trains, and planes. They also work on buildings, bridges, and skyscrapers. Some engineers operate nuclear power plants, chemical plants, and factory assembly lines. Others design medical devices such as pacemakers and artificial limbs. Even computers are designed by engineers. Engineers study things like math, sciences, and the environment. Engineers make life easier by creating things like electricity. They also make fun things, such as bikes, computer games, and amusement park rides.

What Do Engineers Do at the NRC?

Engineers at the NRC make sure that new and existing nuclear power plants are safe. They also make sure that the facilities that make fuel for these plants are operated safely. When the fuel is stored in containers to be shipped or stored somewhere else, engineers make sure the container designs are safe, too. Engineers at the NRC do these things by reviewing safety reports and inspecting the plants and factories. Engineers may also work as project managers and supervisors.

Engineers at the NRC specialize in different technical areas. For example, an engineer might be an expert on how different materials react to heat or cold. This type of engineer is called a mechanical

engineer. Other engineers, called civil engineers, make sure that buildings and other structures are strong enough to do what they are supposed to do. Nuclear engineers are experts on how radiation interacts with matter and make sure that buildings, containers, and machinery are designed to keep people safe from radiation. Industrial engineers make sure that systems are designed to be easy for people to use, to help keep people from making mistakes. These are just a few examples of the kinds of things that engineers at the NRC work on every day.

Engineers at the NRC are constantly working to make sure that the public and the environment are protected from radiation. Engineers at the NRC read reports, take training to stay sharp, and work with computers. Their work involves math, physics, chemistry, and other subjects. Some engineers review reports to make sure that the calculations used in the reports are correct. Other engineers are project managers who help the NRC communicate with the nuclear power plant. Some engineers work as inspectors at nuclear facilities to make sure that everything is being done safely. Some engineers are supervisors.

What Do Nuclear Engineers Do at the NRC?

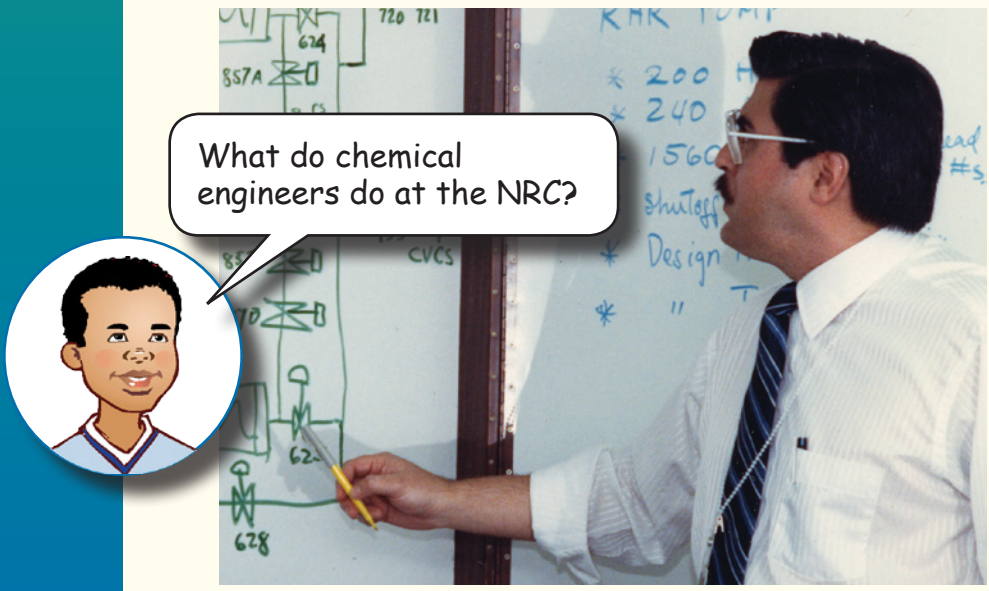
Nuclear engineers make sure that nuclear power plants (and anything else regulated by the NRC) are safe. Nuclear engineers also make sure that people are safe from radiation. Nuclear engineers know a lot about how radiation interacts with matter. They are also experts on how fission (the splitting of a uranium atom) works and make sure that fission reactions are controlled safely.

What Do Civil Engineers Do at the NRC?

Civil engineers make sure that nuclear plants are protected from “natural phenomena.” Natural phenomena include earthquakes, tornadoes, hurricanes, heavy rains, snow, and flooding. Civil engineers make sure that buildings and equipment can withstand all of these events—even earthquakes.

What Do Mechanical Engineers Do at the NRC?

Mechanical engineers make sure that equipment can operate at certain pressures and temperatures. They make sure that pumps, piping, and ventilation systems work. Mechanical engineers look at how water and steam flow through pipes at a nuclear power plant. They also do things like making sure that pipes are built, installed, and tested so that they are safe.



What Do Chemical Engineers Do at the NRC?

Chemical engineers analyze chemical processes to ensure that they are used safely. They make sure that people and the environment are safe from chemicals. To make sure that dangerous chemicals do not contaminate the environment, they analyze chemicals in the water and air near power plants.

How Do I Become an Engineer?

If you want to be an engineer, you will have to graduate from college and earn a Bachelor of Science degree. When you are in high school, you should take classes in math, including geometry, algebra, and calculus. You should also take science classes, including physics, chemistry, biology, and geology and earth science. You should also check out special courses, projects, or field trips that focus on computers, technology, robotics, or similar activities. Reading, writing, and speaking skills are also important.

Once you go to college, you may choose one of many different types of engineering degrees, such as architectural, aerospace, biomedical, chemical, civil, environmental, electrical, industrial, marine, materials, mechanical, mining, nuclear, petroleum, and structural. Once you graduate with your Bachelor of Science degree, you can earn a Masters of Science in Engineering by studying another 2 years or so. After earning an engineering degree, most graduates take a test called the Engineer-in-Training (EIT) exam. The EIT will test how much you know about engineering fundamentals. You

must pass the EIT to get a Professional Engineers (PE) license. To get a PE license, you must also work under the supervision of a PE for 4 years. Becoming a PE shows your commitment to the safety of engineered products and services.

If you want to work at the NRC, you need to have a security clearance. Getting a security clearance involves getting a background check. During the background check, government officials check to see if you have ever done anything illegal, abused drugs or alcohol, or made serious mistakes with money.

How Does the Work of an Engineer Affect Others?

The work of engineers helps to make our lives easier. Engineers build bridges that allow us to cross rivers. Engineers design air conditioners that keep us cool. They operate plants that make electricity and even design computer games that entertain us. An engineer designed the roof over your head that keeps you dry when it rains.

Where Else Do Engineers Work?

Engineers work everywhere. Almost every company that operates equipment or makes a product has engineers. Engineers also work in Federal and State governments.

Where Do I Go for More Information?

For more information about engineers and how to become one, go to: http://www.nspe.org or http://www.bls.gov/oco/ocos027.htm

What Do Lawyers Do?

Lawyers (also called “attorneys”) are advisors and representatives. People who are helped by lawyers are called clients. Lawyers help clients avoid or solve legal problems. They advise their clients of their legal rights and responsibilities. They also advise people of the consequences of their actions. Lawyers must listen carefully to their client’s questions and concerns. They do legal research to help think of possible actions to help avoid or solve problems.

Sometimes, lawyers represent clients before courts, legislative bodies, and administrative boards. Lawyers must research the laws, statutes, regulations, ordinances, and judicial decisions to help their client’s case.

Lawyers hold positions of great responsibility and must obey strict rules of professional and

ethical conduct. These rules require lawyers to be knowledgeable, hard-working, and timely when serving clients. Lawyers who fail to obey these rules may be punished by being banned from working as a lawyer temporarily—or even permanently.

Not all lawyers work as lawyers. Some lawyers use their legal education to pursue other careers. Lawyers can be found working in international

relations, finance, and civil rights. Some lawyers serve in public office. Others, after gaining experience as a lawyer, become judges.

What Do Lawyers Do at the NRC?

Some NRC lawyers represent the NRC's technical staff in licensing and enforcement cases before administrative boards and the Commission. Other NRC lawyers develop rules for safe and secure operation of nuclear power plants and the safe and secure production and use of nuclear materials. They also argue cases in the United States Courts of Appeals. NRC lawyers can advise NRC employees on nearly every part of the NRC's work. Lawyers must act with integrity, openness, and respect to do their jobs well.

How Can I Become a Lawyer?

If you want to be a lawyer, you will need to graduate from college and then go to law school. After you graduate from law school, you will have to pass a very tough exam known as a bar exam. In college, you should major in a subject that helps develop your reading, writing, problem solving, and speaking skills. When you are in high school, you should take classes in English, literature, history, and civics, and study a foreign language. Do not forget to take math and science classes! Participating in speech competitions, debate teams, mock trial teams, and theater can also help you develop skills used by lawyers.

If you want to work at the NRC, you need to have a security clearance. Getting a security clearance involves getting a background check. During the

background check, government officials check to see if you have ever done anything illegal, abused drugs or alcohol, or made serious mistakes with money.

How Does the Work of a Lawyer Affect Others?

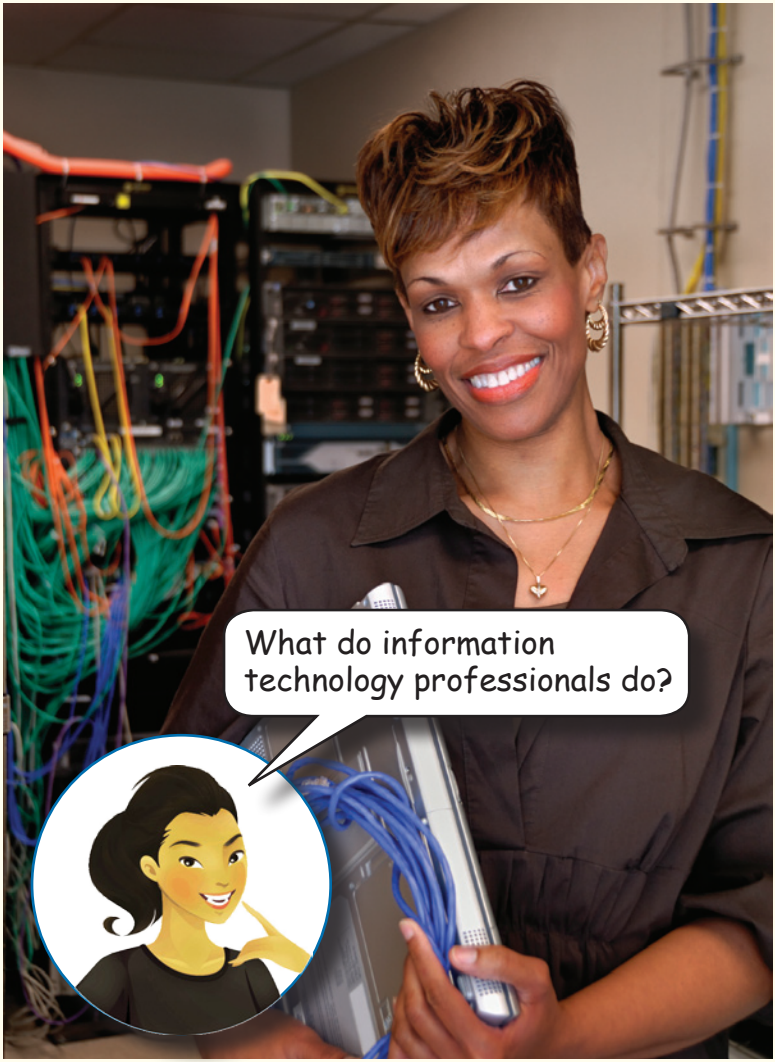
The people most affected by a lawyer's work are a lawyer's clients. A lawyer's clients may be individuals, organizations, businesses, or parts of the government. They may also include the citizens of a county, city, or state. A client can even be all the citizens of the United States. Lawyers work within a legal system that affects almost every part of our lives.

Where Else Do Lawyers Work?

Lawyers work in offices, law libraries, and courtrooms. Lawyers spend much of their time researching and writing. They may travel to meet with clients, gather evidence, or appear before courts or other legal authorities. Many lawyers work in law firms. Some lawyers work for banks or other businesses. Other lawyers work for local, county, or State governments. Still others work for the Federal Government.

Where Do I Go for More Information?

For more information about lawyers and how to become a lawyer, go to:
http://www.bls.gov/oco/ocos053.htm and
http://www.bls.gov/k12/law02.htm.



What Do Information Technology Professionals Do?

Information technology professionals (often called "IT professionals") work with computers and a variety of other technologies. They develop and maintain the information technology systems that support a company's operations. These systems may include phone systems or computer systems. IT professionals can work with regular phones

and cell phones, desktop computers, and laptop computers. They also work with large data computers called servers. All of these systems connected together are called a network. IT professionals may also create Web sites (such as Google) and computer software (such as a video game).

What Do Information Technology Professionals Do at the NRC?

IT professionals at the NRC have many responsibilities. They are responsible for the agency's computer systems. They help employees when there are problems with their computers. They also make recommendations about what information technology products the agency should buy. IT professionals also manage the NRC's communications equipment. They are responsible for all of the phone systems at the NRC. They provide support for video-teleconferencing. IT professionals

also help support the NRC's Operations Center. This is a very important job because the NRC uses the Operations Center for emergencies. Finally, IT professionals are responsible for how employees and the public access the agency's information. They maintain the NRC's internal and external Web pages.

How Do I Become an Information Technology Professional?

If you want to work with information technology, you will need to go to college and earn a bachelor's degree. Or you may go to a technical institute, which requires 2 years of study instead of the typical 4 years in a college. While you are in middle and high school, you should take classes in math, science, computer science, and Web site development.

If you want to work at the NRC, you need to have a security clearance. Getting a security clearance involves getting a background check. During the background check, government officials check to see if you have ever done anything illegal, abused drugs or alcohol, or made serious mistakes with money.

How Does the Work of an Information Technology Professional Affect Others?

IT professionals make it possible for organizations to automate their daily work operations and activities. Every facet of technology that is used as part of the day-to-day operations of an organization is developed and maintained by IT professionals, including phone systems, computer systems, Web sites, and software.

Where Else Do Information Technology Professionals Work?

Almost every workplace that has telephones or computers employs IT professionals. Information technology professionals work in almost every industry or business. They can also be found in most government agencies and nonprofit organizations. Some IT professionals own their own companies, while others support large corporations or governments.

Where Do I Go for More Information?

For more information about IT professionals and how to become one, go to: http://www.bls.gov/k12/computers.htm.

What Do Investigators Do?

Investigators search for information or ask people questions about an event, such as an accident or a crime. They connect clues to find facts about legal, financial, or personal matters. An investigator can work at a public agency, such as a police department, or at a private firm. Some investigate

computer crimes, such as identity theft. Others work for lawyers to investigate individuals who may have done something against the law. They also conduct surveillance to prove that people are telling the truth about where they are and what they are doing. Sometimes investigators go undercover, pretending to be someone else in order to get information. They interview people and

do background checks. Sometimes investigators use cameras and microphones; sometimes they do computer searches to do their jobs.

What Do Investigators Do at the NRC?

At the NRC, investigators look for illegal behavior by the people or companies that the NRC regulates. NRC investigators have slightly different roles than police investigators. This is because NRC investigators have to know about laws that regulate people and companies. NRC investigators work the same way as other types of investigators—they do interviews and computer database searches. NRC investigations start when the NRC gets a tip, or after an inspection.

Some investigators at the NRC focus their attention on NRC workers and procedures. These investigators are looking for people wasting money, committing a fraud, and other kinds of poor performance. One of the main focuses of these investigators is to figure out if NRC employees may be threatening health and safety by performing poorly.

The NRC also has investigators known as civil rights specialists. They investigate and try to resolve disagreements between agency employees.

How Can I Become an Investigator?

If you want to be an investigator, you need to have special skills that are usually learned on the job.

You should consider getting a college degree in criminal justice. Some investigator jobs may require that you have worked in law enforcement. If you want to be an investigator who works mostly with computers, you will need to get a college degree in computer science. For some types of investigative work, such as investigating businesses, you may need a college degree in accounting. Many investigators have special training from the military or law enforcement agencies. Investigators should know about court decisions on constitutional rights, and what evidence can be used in court. NRC investigators have college degrees and at least 5 years of experience as an investigator.

Investigators must be neutral and objective, which means that they do not take sides. Their primary interest is learning and sharing the facts about a situation.

If you want to work at the NRC, you need to have a security clearance. Getting a security clearance involves getting a background check. During the background check, government officials check to see if you have ever done anything illegal, abused drugs or alcohol, or made serious mistakes with money.

How Does the Work of Investigators Affect Others?

Investigators can provide evidence that leads to a person going to jail. Investigators can help someone find something—or someone—that is missing. Investigators who work for the police help protect people from crimes.

NRC investigators help to make sure that people and companies are following the NRC's rules. This means that NRC investigators help keep the public and the environment safe from radiation. They also make sure that NRC employees are following rules and doing the best work they can.

Where Else Do Investigators Work?

Investigators work for many different public and private agencies. They work for cities, counties, or states. Some investigators work for lawyers, helping them find evidence for their cases. Investigators also work for private companies that do research on many different topics.

Where Do I Go for More Information?

For more information on the different types of investigator jobs available in your area, go to: www.indeed.com/q-Investigator-jobs.html. Another site to check for information about investigators is http://www.bls.gov/oco/ocos157.htm.

What do scientists do at the NRC?

What Do Scientists Do?

Scientists usually do research and analysis and perform experiments to gain new knowledge or develop new materials. Scientists work closely with engineers. Scientists use math, physics, chemistry, and biology to improve life for people. Scientists have made most of the major new discoveries during the last few centuries and continue to take the lead in expanding our knowledge through scientific discovery.

What Do Scientists Do at the NRC?

Scientists at the NRC help with the agency's technical work. This involves reviewing designs for nuclear power plants and the fuel that they use. Scientists also make sure that containers used to ship and store new and used nuclear fuel are safe. They even look at the places that make nuclear fuel to be sure that they are safe. Scientists learn about things such as soil, rocks, rivers, streams, lakes, oceans, and annual weather

conditions at each nuclear location. Scientists look at all of this information to help protect the public and environment from radiation. Sometimes, scientists help perform inspections of things regulated by the NRC. Scientists may also become project managers and supervisors at the NRC.

What Do Geologists Do at the NRC?

Geologists at the NRC are experts on such things as soil type and density, seismic hazards, and groundwater. They make sure that the soil and crushed stone (or other dense materials) used under and around buildings behave within limits during natural events like earthquakes and flooding. Geologists help to make sure that

buildings do not settle, crack, or fail under these conditions. Geologists may also do inspections or help with investigations. Sometimes, geologists drill many holes in the ground to take and study small amounts of soil and rock. These tests are very important for finding out how to design buildings and structures for any new nuclear facility. The tests are also very important for finding out how things move around after getting spilled onto the ground during a nuclear accident.

What Do Statisticians Do at the NRC?

Statisticians at the NRC use statistics (a type of math) to help the NRC figure out how risky a decision might be. They also consider other factors to help the NRC make decisions. Statisticians help develop recommendations for how the NRC regulates its licensees. They also use computers to help prepare for emergencies.

What Do Physicists Do at the NRC?

Physicists at the NRC perform reviews to make sure that facilities are safe. Physicists analyze what could happen in a potential accident to make sure that the public and environment are not exposed to too much radiation. Physicists at the NRC may also do research to learn more about things like new materials or fire safety. They may also help develop new computer software to help predict how nuclear reactors (or other things) will work. Physicists at the NRC may also do inspections.

What Do Health Physicists Do at the NRC?

Health physicists at the NRC are experts on how radiation affects humans, plants, and animals. Health physicists make sure that people and the environment do not get exposed to too much radiation. They also review how nuclear materials are used to be sure that they are used safely. Health physicists inspect facilities to make sure that workers are exposed to as little radiation as possible.

How Do I Become a Scientist?

If you want to be a scientist, you will need to go to college to earn a Bachelor of Science degree. You may also need an additional degree, called a master's degree. In college, you may choose one of many different types of science degrees, such as astronomy, biology, chemistry, environmental science, geology, earth science, medicine, meteorology (weather), oceanography, metallurgy, or physics. When you are in high school, you should take classes in math, including geometry, algebra, statistics, and calculus. You should also take physics, chemistry, biology, environmental science, and geology and earth science. You should check out special courses, projects, or field trips that focus on computers, technology, robotics, or similar activities. Reading, writing, and speaking skills are also important.

If you want to work at the NRC, you need to have a security clearance. Getting a security clearance involves getting a background check. During the background check, government officials check to see

if you have ever done anything illegal, abused drugs or alcohol, or made serious mistakes with money.

How Does the Work of a Scientist Affect Others?

Scientists help expand our understanding of the world through research and testing. They also help invent new products and develop new services. Scientists may also help ensure the safety of the public and the environment. In general, the work of a scientist helps to make our lives easier and safer.

Where Else Do Scientists Work?

Scientists work at colleges, universities, and national laboratories, where they do research, testing, and teaching. They also do research and testing in various industries, companies, and sectors of the Federal and State governments.

Where Do I Go for More Information?

For more information about different kinds of scientists and how to become a scientist, go to these Web sites:

Atmospheric Scientists:
http://www.bls.gov/oco/ocos051.htm
Biological Scientists:
http://www.bls.gov/oco/ocos047.htm
Chemists and Materials Scientists:
http://www.bls.gov/oco/ocos049.htm
Environmental Scientists:
http://www.bls.gov/oco/ocos311.htm
Geologists and Hydrologists:
http://www.bls.gov/oco/ocos312.htm
Physicists and Astronomers:
http://www.bls.gov/oco/ocos052.htm

What Do Security Specialists and Safeguards Analysts Do?

A security specialist provides safety for people, property, and computers. The job of a security specialist can take many forms. A security specialist could be a bodyguard for a celebrity or a guard for a special building. Some security specialists protect computer networks from hackers. They use special software and watch the network for hackers. They try to prevent breaches and fix the network after attacks happen.

Safeguards analysts protect important nuclear material by keeping track of how much nuclear material there is and where it is located, much like a bank accounts for money. This makes sure that nuclear material does not fall into the wrong hands, since terrorists or other criminals could steal nuclear material secretly if this information is not tracked. Protecting this important information about nuclear material helps to protect the public and the environment.

What Do Security Specialists and Safeguards Analysts Do at the NRC?

Security specialists and security analysts at the NRC ensure the safety and security of nuclear materials and buildings where nuclear materials are stored. They might do this by looking at the security of a building. Some nuclear material is more hazardous than others. Security specialists make sure the most hazardous nuclear materials are in the strongest and most secure buildings. They

keep a watchful eye for intruders by monitoring things like motion detectors, alarms, walls, and fences. Security specialists and security analysts know the best way to respond to emergencies.

Security specialists at the NRC also make sure that nuclear material does not get stolen or used for terrorist activities. Security specialists make sure that nuclear material is safe while it is being used, stored, and transported. Safeguards analysts write the rules that security specialists use. They help security specialists figure out the best ways to protect nuclear material.

How Can I Become a Security Specialist or Safeguards Analyst?

Security specialists and safeguards analysts have special skills. If you want to be a security specialist or a safeguards analyst, you will need to either go to college or get trained by someone who is already experienced. Most security specialists have military or law enforcement training and experience. Security specialists who protect computers have special training and experience in the hardware and software that protects computers and telecommunications.

If you want to work at the NRC, you need to have a security clearance. Getting a security clearance involves getting a background check. During the background check, government officials check to see if you have ever done anything illegal, abused drugs or alcohol, or made serious mistakes with money.

How Does the Work of Security Specialists and Safeguards Analysts Affect Others?

Security specialists and safeguards analysts protect the public. They make sure that nuclear material is kept out of the wrong hands, and that it is used safely. At the NRC, they make sure that nuclear materials aren't used by terrorists to harm people. Security specialists and safeguards analysts work with the Federal Bureau of Investigations, the Central Intelligence Agency, and Nuclear Security Administration—the "intelligence community." The analysts make sure that users of nuclear material are good at keeping track of how much nuclear material they have and where it is. They also make sure that users of nuclear material have plans in place in case of emergencies.

Where Else Do Security Specialists and Safeguards Analysts Work?

Security specialists protect people, property, and computer networks in all areas of the community. In the military and on police forces, a security specialist identifies situations where terrorists may

affect the public. They also analyze crime and recommend ways to eliminate it. Sometimes security specialists are bodyguards or security guards.

Where Do I Go for More Information?

To find out more about how to become a security specialist, go to:
http://degreedirectory.org/articles/How_Do_I_Become_a_Security_Specialist.html.
For more information on the different types of security specialist jobs available in your area, go to:
http://www.securityspecialistjobs.com.

Which career did you choose?

Which Career Did You Choose?

"A Journey to Your Future: Make Discovering Your Career an Adventure" answers your questions about certain careers: the educational requirements, types of work, and effects on the lives of others. This book also has information about additional career resources. We hope that after reading "A Journey to Your Future: Make Discovering Your Career an Adventure", you are closer to making a decision about your career—a career that will be exciting, that will build on your strengths, and that might result in your becoming known as an "expert" in your field.

Once you've become an expert in your career field, you can continue to do great work by becoming a leader. This could mean that you supervise or manage a group of people or that you manage a project.

At the U.S. Nuclear Regulatory Commission, leaders help make sure that the agency meets its goals. Leaders accomplish this by working hard to connect the agency's values of integrity, service, openness, commitment, cooperation, excellence, and respect with its mission to protect people and the environment.

Thank you for your interest in this book, and good luck on your journey!

About the Authors

The U. S. Nuclear Regulatory Commission periodically conducts training programs for employees who demonstrate they have potential to be leaders. One such program is called the Leadership Potential Program (LPP).

This book, "A Journey to Your Future: Make Discovering Your Career an Adventure," was developed by the LPP class of 2010 as an action learning project and demonstrates our commitment to public service and interest in helping provide insight to students who are exploring career choices. "A Journey to Your Future: Make Discovering Your Career an Adventure" is a book that we wish we had when we were beginning to think about our careers, because it provides so much information about how to prepare, what type of work to expect, and what the rewards may be for many exciting, different careers. We hope the book helps you find your way on your journey.

U.S. Nuclear Regulatory Commission Leadership Potential Program of 2010 includes:

Doug Broaddus
June Cai
Christopher Cook
Yoira Diaz-Sanabria
Jason Dreisbach
Shana Helton
Robert K. Johnson
David Jones
Ray Kellar
Ken Lambert
Gilly Martin
Michael McCoppin
Kevin O'Sullivan
Eric Oesterle
Kala Shankar
Jason Shay
Undine Shoop
Brooke Smith
Mary Spencer
Leslie Terry
Colleen Todd
Anthony Ulses
Sandra Valencia
Dori Votolato
Florine Williams

NUREG/BR-0474
June 2010