

# CHEMICAL ENGINEERING

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# MANAGING YOUR ENVIRONMENTAL AUDIT

This article describes what environmental audits are, why they are conducted, and what to do if your company or plant is subjected to one—before, during and after it.

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**A**n environmental audit is a thorough examination and testing of a company's or a facility's operating records and environmental practices, to gather information about its compliance with federal, state and local environmental regulatory requirements. An "audit" is a legally defined activity that differs from the environmental reviews that most firms routinely conduct, because the latter do not follow strict auditing principles.

A chemical engineer might get involved in an environmental audit as a member of the audit team, or in preparing for an audit of a plant. This guide is designed to help the engineer and plant management perform either of those tasks.

Firms often use an audit as a tool to manage the task of complying with regulatory requirements, and thus eliminate the likelihood of violations. But an audit's results can be used in other ways as well, such as determining capital-spending plans and operating budgets, and reducing penalties if environmental violations are found.

The audit may be conducted (a) by the firm itself — either by an internal team of company employees, or by an outside contractor — or (b) by a regulatory agency, such as the U.S. Environmental Protection Agency (EPA). The latter type of audit is often a regulatory inspection whose purpose is to determine compliance with specific regulations; it may sometimes be viewed by the company as a "hostile" audit, both because it is unwanted and because it can result in fines for noncompliance.

The best type of audit for assuring environmental compliance is not really an audit at all, but a continual review of operations by plant management and personnel. Communication, and willingness to take action to correct problems as they arise, are characterized by a "We don't want to operate that way anymore" attitude. (Even in this atmosphere, however, there is still a need for an occasional formal audit to check progress.)

## The audit team

The audit team is ideally composed of:

- An attorney, who provides "attorney-client privilege," and can protect confidential, sensitive or noncompliance matters from premature discovery by outside parties. He or she will seek ways to limit your legal exposure and help protect your legal rights.
- A certified public accountant (CPA), who can suggest specific "tests" of the system that comply with standard auditing procedures and rules (analogous to those used for financial audits) and address certain tax and financial issues. By having a CPA on the audit team, the engineer's personal liability arising from any oversights or deliberate deceptions by others may be substantially reduced.
- One or more engineers familiar with industry, company and plant practices and current environmental regulations.
- A member of the plant management familiar with the specific site and its operations.



Frequently, especially during internal audits, the team will be accompanied by someone from the corporate environmental staff who is familiar with the plant and its operations and who represents the corporation's interests as a whole.

Depending on the resources available and the purpose of the audit, companies use different types and sizes of teams. These teams may be one person who audits on a periodic basis in a specific area, or an entire multi-discipline team that audits several plant functions at once.

It is sometimes difficult to schedule a team audit, because key individuals may not always be available when they are

needed. To get around this, some companies have designated audit teams.

**Working papers for the audit**

Several types of audit documents are currently in use. These working papers are generally subject to attorney-client privilege (in the case of an internal audit), and they may contain the most revealing and specific comments, notes on legal violations, and other equally sensitive material.

- **Manual.** Some companies use an exhaustive manual of questions to guide the auditor. The manual must be general enough to cover the different facilities, yet specific enough to be thorough. (There must be a separate manual for each plant.) Preparation of this type of manual is very time-consuming. Answering the questions in it imposes a heavy paperwork load on the auditor and the plant. However, the results are quite satisfactory. One major chemical company uses an Environmental Review Manual that is over 150 pages long — it takes hours to read, and much longer to use during an audit.

- **Checklists.** A second type of audit document consists of a series of checklists, generally in the form of yes/no questions, with negative answers explained. Generally, the questions are broadly worded, and may be defined broadly or narrowly, depending on the auditor's judgments.

- **Outlines and interviews.** The third type of working paper is an outline to guide the auditor in interviewing the appropriate plant personnel — operators, engineers, superintendents, etc. The weakness of using the outline/interview approach alone is that it relies solely on opinions and people's recollections. An interview can play an important part in the audit process, by directing the audit team to areas that warrant further attention, such as prior improper waste-disposal or -treatment practices that may affect current operations. For example, an auditor was interviewing plant superintendents about the facility's practices, when one of the most senior of them mentioned a past practice of open burning of surplus arsenic inhibitors. This revelation led to an investigation of the statement and an eventual reexamination of the groundwater at the site.

Working papers come in many forms and in all degrees of completeness, depending on their purpose and scope. One firm used an outline that did not address compliance with environmental regulations, but that focused on whether or not the plant had the right type of information on hand for it to manage its environmental affairs.

**Table I** — Watch for these frequently encountered problems

<b>Water</b>
Process discharges to the storm sewer Inoperative or poorly maintained sampling equipment No effluent flow-measurement device Process-area diking broken or nonexistent Storm drains in liquid bulk-transfer areas Oil-water separators improperly installed No laboratory quality-control/quality-assurance program Runoff from storage piles going to the storm sewer Improper permit reporting Outdated or poorly written Spill Control Plan
<b>Air</b>
Vents and exhausts not registered Lack of data on registered or unregistered emission points Lack of Air Pollution Episode Alert Plan "Guesstimates" on performance of control equipment — lack of test data Improper worker protection in dusty environment Neighborhood complaint file incomplete and/or lacking resolution of complaints Dust from plant operations on building roof and pavement
<b>Solid waste</b>
Sloppy housekeeping Careless drum or container handling (leaks and/or dents) Mixing process waste with office trash Unreported in-plant dumpsites Poor recordkeeping Incomplete analysis of hazardous wastes being sent offsite Incomplete files on past disposal practices Unlabeled drums Leaking containers

**Table II** — Checklist for preparing for an environmental audit

<input type="checkbox"/> Contact corporate legal and environmental departments <input type="checkbox"/> Determine scope of audit <input type="checkbox"/> Read regulations and examine permits <input type="checkbox"/> Determine what might be significant <input type="checkbox"/> Review what auditors will see <input type="checkbox"/> Examine maintenance schedule <input type="checkbox"/> Tour powerhouse and substations <input type="checkbox"/> Check files and records <input type="checkbox"/> Establish how logistics will be managed <input type="checkbox"/> Duplicate records <input type="checkbox"/> Send background materials to auditors
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**What gets audited**

Almost anything that happens in a chemical-process-industries (CPI) plant can be audited. Table I lists some problems frequently encountered during audits — things you should pay special attention to.

Records are the most important thing that will be examined. However, the audit may not be confined to these. Review of records on water or air discharges may lead the auditor to check the laboratory (to determine data validity), the operations of the powerhouse, or maintenance records.

The auditor may want to look at emission or discharge points, sampling equipment, or waste-management and disposal sites. A conscientious auditor has even followed waste



shipments leaving the plant, to determine the truck route and to confirm waste deliveries.

Plant operations, facilities, personnel and appearance are often examined during the audit. An auditor may ask questions about how a particular waste or operation has been handled, or what has been done to change operations or solve a problem.

Plant housekeeping does get audited, even if unofficially. The overall appearance of an area helps the auditor form an impression of management's priorities.

### Preparing for an audit

Except in the case of a surprise inspection by a regulatory agency (most inspections *are* scheduled), you will be notified of a pending audit. With sufficient planning, a successful audit can be accomplished with a minimum of disruption. Some of the things you can do to prepare for one are described below and summarized in the checklist in Table II.

1. Make certain that the corporate environmental staff and legal department know about the upcoming audit, and find out what they will do to help you.

2. Determine the scope of the audit. In many cases, it will be single-faceted, and confined to only one subject area — i.e., air, water, hazardous wastes, etc.

3. Prepare yourself mentally for the audit. One key thing to do is to read the pertinent regulations and examine the plant's environmental permits. Study them — mentally disassembling and reconstructing them — to determine how they pertain to your plant and its operating practices. This task should not be taken up lightly. You need to have a tremendous amount of detailed knowledge about the environmental operations at your plant, and the regulations are almost always written in a legal style that is boring and hard to follow. The degree of detail needed to prepare for a regulatory inspection cannot be too strongly emphasized — thousands of interrelated items can affect plant compliance, and it is important for the engineer to be familiar with the details and the reasons for certain practices. Table III lists the major U.S. federal environmental laws and regulations that affect the CPI.

4. Determine what might be significant to the auditors, keeping in mind that what is insignificant to one person may be significant to another. Check *everything!* For example, make sure that the plant has correctly filed all the reports that it is required to file, that there are no unpermitted sources, that your analytical methods are in *exact* compliance with those in the permit, and so on.

5. Review what the auditors will see. Walk through the plant with a critical eye, or have someone with experience at another company take that walk and report back. Check the overall level of housekeeping within the plant (which is a measure of attention to environmental control), and make certain your facility looks as if you care for it and for the environment.

6. Examine the maintenance schedule. Whenever possible, postpone any major projects, such as demolitions, that might detract from the cosmetic appearance of the facility, and accelerate dress-up items that will improve plant appearance. This is not being deceptive — just showing off your best side. The presence of insulation and its dust never fails

### Tips for the auditor

**Here are some things to keep in mind if you are the one who will conduct the audit.**

**Support.** If someone at a policy-making level within the organization initiates the audit, your task becomes much easier, since lower levels of management will conform to upper management's wishes. Occasionally, the request comes from middle management. The scope of this audit will be limited, since the audit cannot go above the level of management that initiated it. An audit authorized by a plant manager cannot address problems that the corporate or division management might have created, because such problems are beyond the audit's scope.

**Communication.** To maximize communication, be clear and straightforward with everyone involved. Let people know why you are auditing, what you will examine, how you will conduct the audit, and how and to whom the findings will be presented. No plant manager wants people snooping around "his" plant without first having a clear idea of why the auditors are there and what they will be reporting on. Exit interviews should include plant management and summaries of the final report should be shared with it.

**Consensus.** Anyone undertaking an audit *must* have the consensus of all involved levels of management on what is and is not to be examined. A carefully worded scope-of-work should be written, and must be followed strictly. Without this agreement, both the auditor and the company may be exposed to great financial and legal liability. For example, if during an audit of compliance with air pollution requirements the auditor observes a critical, unaddressed occupational-health problem, he or she may feel obligated to report it, and by doing so could expose the company to potential litigation or force premature disclosure of the problem.

**Significance.** This is probably the most difficult thing to manage during an audit, as determining this requires experience and judgment. What is significant to one person may not be to another, and the objectives of a plant manager are far different from those of the auditors. Initial agreement on the scope of the audit and the level of detail should, if possible, be incorporated into the scope of work. The faults addressed in the audit report should be significant and balanced — recommendations suggesting insignificant actions discredit the auditors and consume valuable time on trivial matters.

**Cooperation.** Without cooperation, you cannot audit, or do much of anything, at the site. It is wise to enlist the assistance of persons who have the ability to commit the facility resources, and who have the responsibility for the successful outcome of the audit. By obtaining the cooperation of plant management, and by letting it remove obstacles for you, your job becomes much easier; without cooperation, routine obstacles become insurmountable.

**Action.** Recommend specific actions to be completed. *Never*, under any circumstances, provide an observation or opinion on something that is outside of your expertise unless it is obvious, and even then use great caution before putting it into your report. General, nonspecific or unsupported observations, conclusions and recommendations can expose plant management to legal liability. An audit comment is not a recommendation; it doesn't require specific actions, but may provide a "legal" notice. All comments and recommendations should be carefully evaluated for their potential impacts.

**Wording.** The final wording of any auditor's report must be reviewed by legal counsel.



to raise questions about handling and notification procedures for removing asbestos.

7. Have the superintendent of the powerhouse give you a tour of it and the substations. Ask questions about oil handling and storage practices and PCB (polychlorinated biphenyl) containment and storage areas. Find out where floor drains lead, and ask about the water treatment plant and its blowdown. If the boilers are coal-fired, look at the coal preparation, handling and storage areas and ask about coal-pile runoff, fugitive dust, and emission and discharge points.

8. Make certain that your files and records are in order. Table IV lists some of the files the auditor is most likely to examine, and describes the type of detailed investigation to which you may be subjected.

Check your Oil Spill and Hazardous Substances Contingency Plan, and make sure that all things the company promised would be accomplished by now have been done, or revise the plan before it is inspected. Make sure all the required signatures are on the plan, and that it has been

revised within statutory limits. It is not illegal to have the spill control plan reviewed, rewritten and reauthorized the day before the auditor arrives.

If you are being inspected for compliance with air-pollution laws, make certain that your air-emission inventory is up to date, and check the calibration records for your monitoring devices. Review any records of complaints or violations. There is also an often-overlooked Air Pollution Episode Alert Plan, which requires plant shutdown during air-pollution episodes, that needs to be reviewed and brought up to date.

Verify that the 90-day-storage rules and other requirements of the Resource Conservation and Recovery Act (RCRA) have been followed and that your records support this. It is always good to have onsite storage of hazardous wastes at a minimum when the auditor arrives.

If you find evidence of gross mismanagement of records, or accidental or deliberate under-reporting of the number or size of permit excursions, *run* to your corporate attorney for help.

9. Work with the plant manager and other key individuals

**Table III** — Be familiar with these U.S. federal environmental laws and regulations that affect the chemical process industries

Law	Regulations*	Subject
	40 CFR 1-49	General and procedural rules governing the U.S. EPA, and federal grants
Clean Air Act (CAA)	40 CFR 50 51-52 53 60 61 62 65 66	National ambient air quality standards (NAAQS) State implementation plans (SIPs) Ambient air monitoring — test methods New-source performance standards (NSPS) National emission standards for hazardous air pollutants (NESHAP) State plans for designated facilities and pollutants Delayed compliance orders Assessment of penalties
Clean Water Act (CWA)	33 CFR 153-157 40 CFR 110-117 121-129 131 136 220-229 401-463	U.S. Coast Guard oil spill regulations Oil spills and hazardous substances — reporting, removal and penalties National pollutant discharge elimination system (NPDES) program Water-quality planning and standards Test procedures for pollutant analyses Ocean dumping Effluent standards for specific industries: 403 Pretreatment standards (general) 411 Cement 413 Electroplating 414 Organic chemicals 415 Inorganic chemicals 416 Plastics and synthetics 417 Soaps and detergents 418 Fertilizers 419 Petroleum refining 420 Iron and steel 421 Nonferrous metals 422 Phosphate 423 Steam electric-power generating 424 Ferroalloys 425 Leather tanning
		426 Glass 427 Asbestos 428 Rubber 430 Pulp and paper 433 Metal finishing 439 Pharmaceuticals 443 Paving and roofing materials (tars and asphalt) 446 Paint formulating 447 Ink formulating 454 Gum and wood chemicals 455 Pesticides 457 Explosives 458 Carbon black
Safe Drinking Water Act (SDWA)	40 CFR 141-143 144-147	Primary and secondary drinking-water standards Underground injection



to establish how the logistics of the audit will be managed. In deciding what is to be inspected, consider the purpose and scope of the audit. What production areas will the audit team visit, and what will it see and not see? What is the company's policy on bringing cameras into the plant, and if cameras are permitted, what can be photographed and what cannot? What safety equipment will be provided, what safety rules will be followed, and how will you handle someone who will not or cannot obey the rules? (For example, in some chemical plants, all employees and visitors must be able to have a tight face seal with a respirator in the event of a release of toxic or hazardous gases. If an auditor has a beard, will you let him into the plant?)

Decide in advance what and how much information you will give the auditors, and who will provide it. During the inspection, the investigating team members will have a natural curiosity about many of the plant operations — some because they don't understand the process, others because they are looking for areas for further fruitful inquiry.

Allow sufficient time for the audit. The auditors have been

asked to assess your plant, and this may be the first time some of them will have seen it. They will require time to verify that things are as they have been told they are. The amount of time required to audit a plant will depend on the size of the group and the thoroughness of its audit. A one-person team may need 5–8 days to thoroughly audit a small- to medium-size chemical plant, while a four-member team may require 2–5 days for a larger facility. These estimates assume good cooperation from the plant.

Schedule visits to coincide with normal production activities. Make sure that the auditors are escorted and that they see what they *need* to see. The escort should be familiar with the plant and able to answer technical and procedural questions.

Plan for partial disruption of plant activities. Make key technical and supervisory personnel available to the auditors. Questions will arise that will require time to answer, and doing this can be disruptive unless plant personnel are ready.

Communicate your objectives, and those of the audit team, to all involved plant personnel and, to the extent practical, get them involved in the audit process. Of course, hourly personnel will not participate, but arrange for some contact between the auditors and the supervisory staff.

Have a conference room set aside for the audit team, and arrange to have luncheons sent in. Everyone loses time with a lunch break outside the plant.

10. Have duplicate copies of records that may be requested, and deliver them at the appropriate time. Audits usually have a limited scope or area of concern, so by determining what the probable cause of the audit is, you can determine which records are likely to be needed. If the plant has had noncompliance citations in a particular area due to equipment malfunction, it is a sure bet that reporting records, and maintenance and repair records and manuals, will be requested. Process flowsheets and material balances may also be asked for — but get approval before you release them, as the company may consider them "Confidential". An internal auditor with a broad audit scope may request advance submission of many more records than an enforcement inspector conducting a limited-scope audit.

11. Gather materials that the auditors can use to familiarize themselves with the plant and its products, and send this information to the auditors before you meet with them. This will help make your face-to-face meeting more productive. For hostile audits, you might send just a schematic of the

Law	Regulations*	Subject
Resource Conservation and Recovery Act (RCRA)	40 CFR 240–257	Solid-waste processing, recycle and disposal
	260	Hazardous wastes — general rules
	261	Definition of a hazardous waste
	262	Hazardous-waste generator standards
	263	Hazardous-waste transporter standards
	264	Standards for existing treatment, storage and disposal facilities (TSDFs)
	265	Interim status regulations for TSDFs
	267	Interim standards for new hazardous-waste disposal facilities
	270	Hazardous-waste permit program
Toxic Substances Control Act (TSCA)	40 CFR 702	General practices and policies
	704	Reporting and recordkeeping
	707	Import and export
	710	Inventory reporting
	712	Chemical information rules
	716–717	Health and safety data reporting
	720	Premanufacture notification
	761	Polychlorinated biphenyls (PCBs)
	762	Fully halogenated chlorofluoroalkanes
	763	Asbestos
	775	Storage and disposal of waste material
	792	Good laboratory-practice standards
Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), or Superfund	40 CFR 300	National contingency plan

\*Citation in the U.S. Code of Federal Regulations; first number (40 or 33) indicates the Title number, the second number(s) indicate(s) the Part(s). For example, 40 CFR 1–49 is the abbreviated citation for Title 40 of the CFR, Parts 1–49.

The entire 40 CFR is available from the U.S. Government Printing Office, for under \$80. There are several news services, such as the Bureau of National Affairs *Environmental Reporter*, that provide updates and interpretations of the principal environmental (but not TSCA) regulations. These services cost about \$700–\$1,000 per year.



plant layout, but for friendly audits you might include flowsheets, photographs, process descriptions, etc.

**During the audit**

In an audit by a regulatory enforcement team, *do not* volunteer answers, and *never* give misleading or false statements. During a friendly audit, you and your staff may want to volunteer information, but it is wise to have a member of plant management on hand to make certain that the answers given are not inadvertently misleading.

You need to develop a free flow of information between

**Table IV** — Auditors are likely to examine these files and records

- Permits and support documentation
- Flowsheets
- Air-emission inventories
- Sampling records
- Analytical techniques
- Maintenance records
- Operating logs
- Periodic reports filed with regulatory agencies
- Permit-excedence reports
- Emergency Action Plan
- Oil Spill and Hazardous Substances Contingency Plan
- Notification procedure
- Electrical-transformer labeling, storage and disposal records

**Consider the following scenario as an example of the type of detailed record investigation to which you could be subjected:**

Your plant uses sulfuric acid as a reactant in a sulfonating process, and the spent acid is decanted and stored. The product must be washed to remove the excess acid, and the wash waters are partially neutralized and sewerred, where they are buffered with other plant streams. The neutralization station in your inplant wastewater-treatment system has recently experienced control problems with the lime feeders and pH meters, and has had a number of pH excursions when your permit limits were not met.

When the auditors examine your files, they may start with maintenance records for the lime feeders and pH meters to determine the adequacy of maintenance and frequency of calibration. The operating logs may be inspected to determine the frequency of the plant operator's attendance to the system. The laboratory analytical and quality-control procedures and the outfall pH-meter calibration will be checked. Finally, the pH records from the outfall will be compared against the information that has been sent to EPA. The auditor may be looking for a pattern of consistent nonreporting, poor maintenance, sloppy operation, etc.

yourself and the auditors, so that you can be sure you really understand their concerns and questions. If they raise a point that you haven't considered or don't know the answer to, seek clarification of the question and what type of answer they are looking for.

Carry a notebook and jot down the important questions as they come up, and your response (or someone else's) to them. Periodically, note the time in the margin of your notes, as it will help you recall the framework in which a question was asked and how it was answered.

Make note of any documents you give to the auditors. They may have copies of certain items, but jot down their requests and formally transmit (i.e., with a cover letter) the

documents to them. You may need to clear certain reports through the plant manager before they can be sent out.

An internal auditor may spend more time with you than in touring the plant. He or she will probably want to discuss your opinions on why certain plant areas are marginally compliant, and what you feel might be needed to improve operations. Don't hesitate to defer to the plant manager on any questions you feel may be sensitive. It is not a good idea to bare your soul or air dirty laundry, because the auditor may have a political axe to grind — and it should not be sharpened at your expense or your plant's. Quite often, though, this person will be in a position to help you by serving as an information resource and an advocate, so don't hesitate to ask for opinions and interpretations of regulatory fine points and gray areas. Develop a friendship, and treat the auditor as you would like to be treated.

Remember that the auditor is someone just like you, who is probably going to be away from home and family for several days, and is usually left alone from quitting to starting time. If possible, invite an internal auditor out or home to dinner, and try to make yourself available after quitting time. Those extra touches will usually be worth the time and effort, because you may get a better understanding of the goals of the audit and of what is happening in other parts of the company.

**Post-audit procedures**

After the audit, plant management should do several things. Table V is a checklist of the actions listed below.

1. Insist upon an exit interview between plant management, participating supervisory staff, and the audit team. Discuss the auditors' work, their findings, and what their report will contain.

2. Insist that the report be marked "Preliminary" until after the plant management and the company attorney have had a chance to review it and make written comments.

3. When the report is issued, read it at least twice. The first reading should be for overall impression; during the second, look for detail and fact. Examine not only what is said but also what is implied.

4. Challenge all unsupported statements and conclusions. Enforcement personnel and (less frequently, perhaps) consultants may sometimes make observations that are outside of their expertise or scope of work, and these unsupported comments can be interpreted as a legal notification that a particular situation exists. An unsupported statement can come back to haunt you.

5. Create a "positive-response paper trail" on all audit recommendations. The auditors will generally recommend specific areas for further investigation, which might include implementation of procedural controls or installation of equipment. Consider all of the recommendations seriously, and document the consideration — even if the documentation merely says that the plant has studied the audit report and has found that the technology to solve the problem does not exist. Make sure, however, that the engineering group has studied the recommendation and that it does support the conclusion.

6. Respond positively. It does little good if the paper trail of positive response does not result in specific actions.



Procedural controls cost little to implement, and large capital projects can often be phased in. Translate the auditors' recommendations into the plant capital budget, and let others decide how much can be spent and on what.

### Plan to be audited

In today's society, the EPA audit is a reality, and sooner or later someone will be around to check on your compliance with your environmental permits. In addition, more and more companies are conducting their own internal audits, so you could very well be subject to one (or more) of those, too.

**Table V** — There is still plenty to do after the audit is over

- Participate in exit interview
- Have report marked "Preliminary" pending review
- Read report at least twice
- Challenge unsupported statements and conclusions
- Create a "positive-response paper trail" on recommendations
- Respond positively to recommendations

It will be in your best interest, and your plant's and company's, to be ready for the audit before it happens. Make compliance with environmental requirements a priority: Do your best to comply with the regulations, correct violations and their underlying causes immediately, keep accurate and up-to-date records, file the required reports on time, and practice good housekeeping. Try to anticipate problems before they arise, and gather support for solving little problems before they become big ones.

Much of your future career success will depend upon factors that you cannot control. For example, you cannot control plant and company management and its willingness to spend (or tendency to withhold) money for environmental projects. You will have to maintain good public and professional relations with the regulatory community and the public at large, and you cannot control these things either. An important part of your job is likely to be keeping management's attention focused on environmental issues that may affect the plant, and getting the money spent on projects by supporting those that you think are worthwhile. You will not have control over what is spent, but you will have influence, and you must keep trying. If this sounds a bit like dealing with intangibles and managing some things that are unmanageable, you have recognized the political nature of your assignment — the one *not* in your job description.

Suppose that there are some sensitive areas where the plant is marginally compliant or noncompliant with environmental regulations, and that you have discussed the situation and possible solutions with plant management. If the company's capital budget does not include funds for additional environmental projects, or if management does not realize the importance of what you are advocating, it may be possible to get an internal auditor to help you remedy the problem. But do so very carefully. By letting someone in upper management, preferably from the corporate environmental affairs staff, "discover" the problem, attention can be focused on this area.

As a last resort, use the EPA to help you "manage up." This is very tricky and may be quite difficult to accomplish successfully, as it requires cooperation from non-company people whom you cannot control, and it is highly dependent upon the willingness of EPA to trust you and to see things your way. Once you tip the agency off to a problem, it is obligated to address that problem. However, the consequences may not always be what you had expected unless you can control the situation. By taking the right approach, it is possible to let the EPA inspector uncover the problem and let him or her force the plant into compliance with an Administrative Order or Consent Decree. This can and has been done successfully, and when it works, everyone wins. But if it backfires, or your role becomes known, your job may be in jeopardy.

### Hero or zero?

Hopefully, you can manage affairs in such a way that even surprise audits do not get you into trouble. Occasionally, however, an audit, especially an internal one, can become fault-finding instead of fact-finding. Such a situation will be the one that you really cannot control, but you can minimize damage to your career.

Once in a while, you may find yourself in a compromising situation in which you have some share of blame or liability. This is unpleasant and can be serious. Assess just how much trouble you can be in and where the problem is leading. If an internal audit is fault-finding and critical, take it to heart and accept the rebuke without justifying your actions or fighting back. Even if it is someone else's unjustified political vendetta, your best course is to be silent and not fight back. This will eventually pass, and your sins will be forgotten.

If the criticism comes from EPA and if it is serious enough, you could be in legal trouble, especially if you have agreed to overlook certain situations, falsified or altered records, or knowingly allowed questionable practices. Even if you are innocent, you may be held responsible unless you can prove that you were not. The only defense for this type of trouble is to not get into it in the first place — by learning the environmental regulations and how they could be applied to you and your plant.

Another way to protect yourself is to keep a journal of your records and activities, and keep copies of all correspondence you have written on sensitive environmental problems. Keep these records as a permanent file with you away from the office so that they will be yours when you leave. Keep them for at least five years. If litigation arises that involves you, you will need the journals and records, and you cannot rely on your present or former employer to maintain your files as they were.

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