United States of America
OCCUPATIONAL SAFETY AND HEALTH REVIEW COMMISSION
1120 20th Street, N.W., Ninth Floor
Washington, DC 20036-3419

Phone: (202) 606-5100
Fax: (202) 606-5050

SECRETARY OF LABOR,	:	
Complainant,	:	
v.	:	Docket No. 91-3275
WILEY ORGANICS, INC., d/b/a ORGANIC TECHNOLOGIES,	:	
Respondent.	:	

NOTICE OF COMMISSION DECISION

The attached decision by the Occupational Safety and Health Review Commission was issued on March 25, 1996. **ANY PERSON ADVERSELY AFFECTED OR AGGRIEVED WHO WISHES TO OBTAIN REVIEW OF THIS DECISION MUST FILE A NOTICE OF APPEAL WITH THE APPROPRIATE FEDERAL COURT OF APPEALS WITHIN 60 DAYS OF THE DATE OF THIS DECISION.** See Section 11 of the Occupational Safety and Health Act of 1970, 29 U.S.C. § 660.

FOR THE COMMISSION

Ray H. Darling, Jr.

March 25, 1996

Ray H. Darling, Jr.
Executive Secretary

Docket No. 91-3275

NOTICE IS GIVEN TO THE FOLLOWING:

Daniel J. Mick, Esq.
Counsel for Regional Trial Litigation
Office of the Solicitor, U.S. DOL
Room S4004
200 Constitution Ave., N.W.
Washington, D.C. 20210

Benjamin T. Chinni
Office of the Solicitor, U.S. DOL
Federal Office Building, Room 881
1240 East Ninth Street
Cleveland, OH 44199

Michael S. Holman, Esq.
Sarah J. DeBruin, Esq.
Bricker & Eckler
100 South Third Street
Columbus, OH 43215

Michael H. Schoenfeld
Administrative Law Judge
Occupational Safety and Health
Review Commission
One Lafayette Centre
1120 20th St., N.W., Suite 990
Washington, D.C. 20036-3419

UNITED STATES OF AMERICA
OCCUPATIONAL SAFETY AND HEALTH REVIEW COMMISSION
One Lafayette Centre
1120 20th Street, N.W. — 9th Floor
Washington, DC 20036-3419

PHONE:
COM (202) 606-5100
FTS (202) 606-5100

FAX:
COM (202) 606-5050
FTS (202) 606-5050

SECRETARY OF LABOR, Complainant, v. WILEY ORGANICS, INC. d/b/a ORGANIC TECHNOLOGIES Respondent.	:	OSHRC Docket No. 91-3275

DECISION

Before: WEISBERG, Chairman; MONTOYA, Commissioner.

BY THE COMMISSION:

This case arises out of a catastrophic explosion of a chemical reactor vessel at the chemical manufacturing facility of Respondent, Wiley Organics ("Wiley") in Newark, Ohio on April 24, 1991. The explosion caused the death of Steven Wears, whom Wiley employed as the reactor operator, and also resulted in state criminal proceedings against its president, David B. Wiley. Following the explosion, the Secretary conducted an inspection and issued citations charging Wiley with numerous violations of the Occupational Safety and Health Act of 1970, 29 U.S.C. §§ 651-678 ("the Act"), but these proceedings were stayed pending resolution of the criminal action. When they resumed, the parties agreed on a disposition of most of the citation items. Four charges in the Secretary's citation for serious violations are now before us for review: two of five subitems of item 1, alleging

violations of section 5(a)(1) of the Act, the "general duty clause," which requires that an employer keep its worksite "free from recognized hazards that are causing or are likely to cause death or serious physical harm," and two alleged violations of 29 C.F.R. § 1910.120(q), a standard governing emergency response to releases of hazardous substances. Administrative Law Judge Michael H. Schoenfeld affirmed these four items, and for the reasons that follow we affirm his decision. Before considering the merits of these items, however, we must address two procedural issues.

I. TRIAL BY CONSENT ISSUE

A. Background

Wiley was manufacturing a chemical known as R-Glycidol under a contract with the ARCO Chemical Company ("ARCO"). In this process, two substances—alcohol and cumene hydroperoxide—react with a solvent, methylene chloride. There were several stages to the overall process, but for the purposes of this proceeding, only two are relevant. First, the cumene hydroperoxide remaining at the end of the process was removed by a reducing agent. Second, methylene chloride, which is commercially valuable, was distilled out following the reduction of the cumene hydroperoxide. The reduction operation was conducted in a 3800-gallon reactor; the remaining contents, known as "raffinate," were then transferred into a different, 2000-gallon reactor, for the distillation process.

As prescribed by ARCO, Wiley previously used the chemical sodium metabisulphite as the reducing agent. Prior to the explosion, however, Wiley changed the reducing agent to Formalin, which is a solution of formaldehyde and methanol in water. Wiley felt that formaldehyde, which is known as a generally moderate and easily controllable reducing agent, would be more suitable and would produce less waste products than sodium metabisulphite. Although the explosion occurred during the final distillation process, the Secretary concluded and alleged in subitem 1.a.2, one of the two section 5(a)(1) charges in issue, that a recognized hazard existed because Wiley had not properly developed and had not thor-

oughly tested the use of Formalin for the preceding reduction phase of the operation. The procedural question before us is whether that allegation is limited to Wiley's development and testing as it relates to the adequacy of the reactor vessel or whether the parties had tried by consent a more general proposition that the change to Formalin did not conform to accepted industry standards for process development and was implemented without ARCO's consent or authorization.

B. Discussion

Subitem 1.a.2 of the citation alleged as follows:

> [E]mployees working in the vicinity of the 2,000 gallon reactor (N1001) during process operations (such as the production of R-Glycidol and the treatment of "Raffinate Waste"). were exposed to increased risks of fires, explosions, hot materials, and toxic materials caused by the release of processed materials from the reactor or its associated equipment, and due to the employer not taking adequate measures to prevent the hazardous release of corrosive, flammable, and/or toxic materials, in that:
>
> > . . . Formulation changes were made by Organic Technologies, Inc. to the "Raffinate Waste" including, but not limited to, replacing sodium meta bisulfite [sic] with formaldehyde in the reduction and treatment of peroxides. The company made the changes without re-evaluating the adequacy of the N1001 reactor vessel and its safety line and valve to ensure its ability to safely handle runaway reactions and fire load situations.

The complaint simply alleged that "Formulation changes were made without reevaluating the adequacy of the reactor vessel." The judge concluded that nevertheless the parties litigated the adequacy of Wiley's preparation and implementation of the change to Formalin in general, not just with regard to the strength of the reactor, and we agree.

The first part of Fed. R. Civ. P. 15(b) reads as follows:

> **(b) Amendments to Conform to the Evidence.** When issues not raised by the pleadings are tried by express or implied consent of the parties, they shall be treated in all respects as if they had been raised in the pleadings. Such amendment of the pleadings as may be necessary to cause them to conform to the evidence and to raise these issues may be made upon motion of any party

> at any time . . . but failure so to amend does not affect the result of the trial of these issues.

As Wiley correctly notes, under the Commission's lead case on application of this portion of the rule, *McWilliams Forge Co.*, 11 BNA OSHC 2128, 2129-30, 1984-85 CCH OSHD ¶ 26,979, p. 34,669 (No. 80-5868, 1984), consent can only be found when the parties "squarely recognized" that they were trying an unpleaded issue.

The parties here adduced virtually no evidence which could reasonably be construed to demonstrate that they regarded the determination of the adequacy of the reactor as the basis for the alleged violation. Rather, essentially all of the evidence pertaining to subitem 1.a.2 dealt with whether Wiley's overall developmental, testing, and implementation procedures conformed to industry standards or complied with ARCO's protocols and requirements as communicated to Wiley. The record is replete with clear indications that both parties were aware that they were presenting evidence that clearly and unmistakably went beyond the limited allegation set forth in the pleadings. To mention just a few examples, without objection from Wiley the Secretary questioned compliance officer Dennis Collins regarding the evaluation of the potential for a runaway reaction, and Wiley cross-examined on that point. Similarly, both parties examined the Secretary's expert, Dr. Henry M. Grotta, on the accuracy of Wiley's testing method—iodometric titration—in determining the effectiveness of Formalin as a reducing agent. One of the issues addressed in Grotta's testimony was the critical element of the comparative levels of heat produced in the reactions with sodium metabisulphite and Formalin both in laboratory testing and process scale-up when Formalin was tested in amounts approaching production quantities. In addition, Wiley questioned its own personnel, such as Ted Virostko, its R-Glycidol process engineer, regarding various aspects of the process development, including changes to the R-Glycidol production manual resulting from the change to Formalin, as well as its witness Ray E. Witter, who was admitted as an expert in chemical process safety, on his opinion of the

adequacy of its analytical method including its literature search and qualitative and quantitative testing.

As the Commission emphasized in *McWilliams Forge*, consent need not be express but may be implied from the parties' words and conduct. However, while failure to object to evidence that is not relevant to the issue as pleaded may be an indication of consent, failure to object to evidence that is relevant to both a pleaded and unpleaded issue does not imply consent absent some obvious effort to raise the unpleaded issue. *Id.* Arguably, evidence regarding Wiley's overall process development and testing might not necessarily demonstrate consent to try issues unrelated to the adequacy of the reactor because such evidence could be relevant to whether Wiley took appropriate measures to ensure that the reactor would be able to withstand a runaway reaction. However, evaluating the adequacy of the reactor in itself was hardly even mentioned in the case, and neither the parties nor any of the witnesses made any more than the most perfunctory effort to link the process development specifically to the adequacy of the reactor.[1] It is clear on the entirety of this record that the parties were trying the case on the basis that Wiley's process development and testing constituted a separate and distinct hazard under section 5(a)(1). *See RGM Constr. Co.*, 17 BNA OSHC 1229, 1234, 1993-95 CCH OSHD ¶ 30,754, p. 42,729 (No. 91-2107, 1995) (employer consents to try an unpleaded standard dealing with runways

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[1]The presence of a direct and tangible connection between the overall process development and the adequacy of the reactor vessel would have been more plausible had the Formalin process development involved the same reactor as the one alleged in the citation and complaint. However, the reactor referred to in the Secretary's allegations, which is the reactor that exploded, was used only in the distillation process whereas the reduction operation in which Formalin was used was conducted in a different reactor. By presenting evidence relating to the development and testing of the reduction process the parties must have understood that were trying an issue broader than that set forth in the pleadings.

where citation alleges an unguarded open-sided floor or platform, and employer introduces evidence that employees did not work in the area but walked through it).[2]

II. EFFECT OF GRAND JURY PROCEEDINGS

A. Background

This issue concerns the testimony of Dr. Grotta, who had previously appeared as an expert witness for the state in its grand jury proceedings against David Wiley pursuant to an order by the Ohio trial court allowing the disclosure "of matters occurring before the grand jury to any . . . expert consultants assisting in the investigation on behalf of the state as may be necessary to allow said investigators . . . to arrive at any opinions or conclusions concerning any matters to be considered by the grand jury." The order expressly did not authorize disclosure to any other persons not permitted by Ohio Crim. R. 6(E), which requires permission of the court for disclosure of grand jury materials. *In re Special Grand Jury Investigation Concerning Organic Technologies, Inc.* (C.P. Licking County, Ohio, Mar. 25, 1992). Subsequently, Wiley moved in the Ohio court for a temporary restraining order enjoining Grotta from disclosing grand jury materials to OSHA and consulting with and providing opinions to OSHA as an expert. Approximately 5 weeks before the hearing before Judge Schoenfeld, the state court granted that motion in part in an order reading as follows:

> Henry M. Grotta is enjoined from disclosing to the Occupational Safety and Health Administration any information obtained by [Grotta] by the Grand Jury proceedings . . . . It is the court's understanding that the witness . . . has already agreed not to disclose any information and will base any and all testimony upon that information which has been received outside of the Grand

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[2]There are instances in the record in which Wiley objects to evidence on the ground that it was not within the scope of the narrow citation allegation. However, these very occasional objections are incidental in the entirety of this record. Indeed, notwithstanding Wiley's assertion at the outset of the hearing that it was not waiving its objection that the Secretary was impermissibly expanding the scope of the allegation, Wiley's review brief refers to the "hazard related to the distillation process *or* the inadequacy of the reactor" (emphasis added).

> Jury investigation . . . and will proceed with expert testimony based only on those materials legally discovered or received through investigatory processes.
>
> The request for a temporary restraining order is denied as it relates to the witness . . . consulting with or providing opinions to the Occupational Safety and Health Administration as an expert in any matter relating to the company or its Chief Executive Officer, David Wiley. This Court finds that the witness may provide opinions to OSHA based upon materials received through discovery or through investigatory processes. Furthermore, the witness . . . may testify in the pending OSHA administrative proceeding as an expert consultant on behalf of OSHA but with the stipulation that the testimony shall not relate to any of the information obtained through Grand Jury processes.

Wiley Organics, Inc. v. Grotta, No. 93-CV-225 (C.P. Licking County, Ohio, June 3, 1993).

Thereafter, on July 2, 1993, Judge Schoenfeld denied Wiley's motion *in limine* for exclusion of Grotta's testimony. The judge rejected Wiley's implicit conclusion that by testifying Grotta would necessarily reveal material obtained through his involvement with the grand jury. The judge reasoned that through voir dire, cross-examination, and rebuttal, Wiley would have ample opportunity to determine whether and in what respect Grotta's testimony was based on grand jury material, and that any testimony on grand jury information would be excluded at that point. The judge also noted that the Ohio court had not excluded Grotta as a witness, and as the judge put it, "This [ALJ] declines to take any more stringent action in protecting grand jury secrecy than did the court under whose auspices the grand jury convened."

While Grotta testified at the hearing, the judge did not rely on Grotta's testimony in his decision and did not even cite to Grotta's testimony. Wiley, however, contends that the judge committed reversible error by simply allowing Grotta to testify. Thus, Wiley contends in effect that the court's restraining order was violated because the Secretary used evidence and testimony derived from confidential grand jury information, and Wiley disputes the judge's conclusion that Grotta's testimony can be severed into the portion attributable to grand jury information and a portion not attributable to that source. Moreover,

Wiley asserts that the proceedings were "tainted" and it was denied due process because the Secretary used grand jury materials of which Grotta had knowledge to change the theory of the case from that originally set forth in the citation and complaint. In Wiley's view, if the Secretary had not had knowledge through Grotta of grand jury documents and testimony, he would have been unable to formulate and present a more expansive charge. As Wiley asserted before the judge, it would be prejudiced were the Secretary to rely on grand jury material in formulating his case since Wiley would not have access to that information.[3]

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[3]After the conclusion of the criminal case, the Secretary asked the state prosecutor for "copies of the evidence" submitted to the grand jury. The state court issued a decision on the prosecutor's motion for leave of the court under state rule 6(E) denying the state's motion for release of information to the Secretary on the ground that the state had failed to prove a "particularized need" for disclosure of grand jury information, as required by Ohio law. *In re Special Grand Jury Investigation Concerning Organic Technologies*, No. 92-CR-111 (C.P. Licking County, Ohio, June 11, 1993). At the same time Wiley also contended that the state had already impermissibly released some grand jury information contained in pleadings which had been filed with regard to the sentencing portion of the criminal case as well as some interview reports prepared by the Ohio EPA, and Wiley asked for sanctions against the state. The court found that the material set forth in pleadings and the Ohio EPA reports were public records and therefore disclosable.

On appeal by Wiley, the state appellate court ruled that the trial court had erred in concluding that grand jury information filed with the presentence report could be disclosed as a public record. Concluding that Wiley had established a prima facie showing of a violation of state rule 6(E), the court remanded for an evidentiary hearing on whether a violation had taken place. *In re Special Grand Jury Investigation Concerning Organic Technologies*, No. 93-CA-00077 (C.P. Licking County, Ohio, 5th App. Dist. May 9, 1994). On November 15, 1995, the Ohio Supreme Court affirmed the appellate court's conclusion that a presentence report is not a public record. 74 Ohio St. 3d, 656 N.E. 2d 329 (1995).

Wiley makes no argument before us with respect to the state prosecutor's disclosure of grand jury material to the Secretary; rather, its contentions relate only to contact between Grotta and the Secretary.

B. Discussion

On careful review of Wiley's assertions, we conclude that Wiley has failed to present any grounds for relief by the Commission. In the first place, Wiley does not contend that the Commission's public record, including the judge's decision, divulges confidential grand jury information. Assuming for the sake of argument that the Secretary might reveal confidential information in his possession, the appropriate course for Wiley would have been to seek a protective order from the Commission. To the extent that Wiley is concerned that the Secretary simply had access to secret grand jury information through Grotta, Wiley sought relief in the state courts with respect to the Secretary's use of Grotta as a witness. Since the restraining order explicitly does not exclude Grotta as a witness but merely limits his testimony to matters not developed as a result of grand jury information, Judge Schoenfeld plainly did not err in allowing Grotta to testify. Under the doctrine of collateral estoppel, a determination by a court in a prior action is binding on the parties to that action. *See Con-Agra Flour Milling Co.*, 16 BNA OSHC 1137, 1153-54, 1993-95 CCH OSHD ¶ 30,045, p. 41,247 (No. 88-1250, 1993), *rev'd in part on other grounds*, 25 F.3d 653 (8th Cir. 1994). Since the restraining order specifically allows Grotta to testify as to information derived outside the grand jury process, including information obtained from the Secretary's own inspection and investigation, the state court has effectively addressed and rejected Wiley's position that Grotta could not separate opinions or conclusions arising from the grand jury information from opinions or conclusions based on other material.[4]

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[4]At the hearing before Judge Schoenfeld, Wiley cross-examined Grotta as to the basis for his testimony. Grotta relied on, among other things, analytical reports from the OSHA lab in Salt Lake City and a deposition given by Thomas A. Dobbins, Wiley's research and development director who was responsible for developing and testing the Formalin process, as well as the testimony he had listened to throughout the hearing and his own background as a chemist. He also reviewed Wiley's own records of its lab tests and pilot project scale-ups. This recitation is consistent with the representations of the Secretary's counsel regarding the material he furnished Grotta.

Wiley's second contention—that the Secretary used confidential information available only through Grotta as a basis for expanding the allegations against it and that it was prejudiced because it did not have access to that information—appears to assume that the Secretary's theory of the case and litigation strategy was based on privileged grand jury information whereas the state court restraining order specifically prohibited Grotta from disclosing any grand jury material to the Secretary. Moreover, Grotta was listed as an expert witness in the Secretary's prehearing statement, which afforded Wiley the opportunity to conduct discovery to determine whether Grotta had given the Secretary any information outside of the Secretary's own investigation, just as all documents which the Secretary had furnished to Grotta were disclosed to Wiley. On this record, Wiley's argument that the Secretary unilaterally benefited from material which was not available to Wiley is nothing more than speculation. Moreover, as discussed *supra*, the parties freely and thoroughly litigated the broader allegations which went beyond the Secretary's pleadings. Even assuming that the Secretary's litigation posture was based on information not available to Wiley, we cannot conclude on this record that Wiley was thereby prejudiced in the preparation and presentation of its defense.

III. MERITS OF SUBITEM 1.a.2

Having concluded that the parties tried by consent allegations relating to Wiley's overall development, testing, and implementation of the change to Formalin, we now turn to the question of whether the Secretary proved that Wiley's actions resulted in the existence of a recognized hazard at its workplace. A recognized hazard is defined in terms of conditions or practices over which the employer can reasonably be expected to exercise control. *Morrison-Knudson Co./Yonkers Contracting Co., A Joint Venture*, 16 BNA OSHC 1105, 1121-22, 1993-95 CCH OSHD ¶ 30,048, p. 41,279 (No. 88-572, 1993); *Inland Steel Co.*, 12 BNA OSHC 1968, 1970, 1986-87 CCH OSHD ¶ 27,647, p. 35,997 (No. 79-3286, 1986). A hazard may be recognized by either the individual employer itself or its industry.

Id. at 1970, 1986-87 CCH OSHD at p. 35,996. As Judge Schoenfeld noted, there is no dispute that cumene hydroperoxide can react violently when exposed to heat. Since the distillation process required that the raffinate be heated to a relatively high temperature—95°C.—in order to distill out the methylene chloride, Wiley was aware that any substantial amount of cumene hydroperoxide remaining in the raffinate after the completion of the preceding reduction phase would present a hazard.[5] Accordingly, the judge concluded that the heating of raffinate containing cumene hydroperoxide constitutes a recognized hazard. Since the amount of cumene hydroperoxide remaining after reduction was one of the factors with which Wiley was concerned and which it attempted to address during its process development, we conclude that the judge's definition of the recognized hazard is sufficiently specific, and we adopt it.

In discussing whether Wiley discharged its duty under section 5(a)(1) to keep its worksite free from this hazard, the judge conducted a thorough and exhaustive analysis of the evidence and made a number of findings regarding Wiley's development of the Formalin process. In brief, the judge found that Wiley continued the development and scale-up of the Formalin into larger quantities even though the levels of cumene hydroperoxide it was measuring exceeded the maximum prescribed in its own written procedures. The judge noted that when Virostko, the engineer in charge of the R-Glycidol process, informed his supervisors that excessive amounts of cumene hydroperoxide were present, his concerns were not taken seriously, and Wiley made no attempt to follow-up by taking steps to ensure that the Formalin scale-up conformed to the prescribed parameters. He also found that Wiley withheld from ARCO the fact that it had already put the Formalin process into production even though Wiley understood that ARCO had not approved the process and

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[5]For instance, Dobbins testified that cumene hydroperoxide becomes hazardous when exposed to heat. Carry Cunningham, production supervisor, agreed that there was a potential for a runaway reaction during the distillation process if the reduction had not occurred properly.

wanted it studied further. The judge observed that under Wiley's usual contractual arrangements with ARCO, it knew or should have known that ARCO had final authority over any process modifications. The judge placed particular weight on the results of a Hazardous Operations ("HAZOP") review, a detailed study ARCO customarily conducts of all chemical reaction processes performed by its contractors. In this case, the findings of the HAZOP review included several reservations regarding the use of Formalin and prescribed specific actions to deal with these concerns. Among other things, Dr. Ricardo Bogaert, ARCO's process development engineer, and Virostko were to conduct further studies of the effect of using Formalin, including the influence of temperature.[6] In sum, the judge concluded that the prospect of financial gain from a more efficient production method caused Wiley to put the Formalin reduction process into operation before it was fully tested and without taking sufficient measures to ensure that unreacted cumene hydroperoxide would not be present in hazardous quantities. These findings are supported by the evidence and are sufficient to establish that Wiley's worksite was not free from the recognized hazard.

Wiley contends, however, that the judge failed to give proper weight to the testimony of its expert, Witter. Essentially, Witter gave his opinion that Wiley's test methods did not constitute a recognized hazard because iodometric titration, the testing method used by Wiley, is an accepted means in the chemical manufacturing industry for measuring substances such as cumene hydroperoxide. He also felt that Wiley was justified in putting the process using Formalin into production notwithstanding the HAZOP report. Witter opined that since the HAZOP report indicated that the "alternate" Formalin procedure was

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[6]Dobbins also testified that no "conclusive decisions" had been reached between Bogaert and him and that in fact he was still doing experimentation at the time of the explosion. Mark Morehart, the Newark plant manager, testified that at a follow-up meeting with ARCO about two weeks before the accident, the "issue" of Wiley having gone into production was "discussed," and that this discussion included Bogaert's progress in the further study he was to undertake as a result of the HAZOP review.

subject to HAZOP review, the report should have specifically cautioned Wiley not to run the Formalin process if ARCO had any doubts that it had been adequately tested. Based on Witter's testimony, Wiley asserts that "the circumstances allegedly comprising the factual basis for a general duty clause violation did not constitute recognized hazards within the chemical industry" and that the HAZOP study did not put it on notice that using Formalin presented any hazard.

Witter's testimony to the effect that Wiley's practices did not constitute recognized hazards and Wiley's reliance thereon misconstrue the issue presented in this case. As we have said, the recognized hazard here is the presence of unreacted cumene hydroperoxide. The question of whether Wiley took the measures considered customary and reasonable in the industry may be pertinent to whether Wiley had discharged its duty under section 5(a)(1) to keep its worksite free from a recognized hazard, but the question of what conditions the chemical industry would regard as hazardous is nevertheless a separate and distinct inquiry. *See Wheeling-Pittsburgh Steel Corp.*, 10 BNA OSHC 1242, 1245, 1981 CCH OSHD ¶ 25,801, p. 32,244 (No. 76-4807, 1981) (consolidated) (distinguishing whether the employer has taken adequate measures to protect its employees from whether there is recognized hazard in the first instance).

Clearly, and contrary to the thrust of Wiley's brief, Witter's testimony does not exculpate Wiley on the critical issue of the adequacy of Wiley's process development. Witter's opinion that Wiley was justified in proceeding with Formalin as the reducing agent is based on the written HAZOP reports he reviewed, which represent only a part of the overall relationship between ARCO and Wiley. It is clear from the record, as the judge found, that ARCO did not intend that Wiley put the Formalin process into actual production and that Wiley could not have had any misunderstanding on this point. Moreover, nothing in Witter's testimony establishes that the amount of cumene hydroperoxide remaining after the introduction of Formalin was within safe limits or that Wiley could have safely pro-

ceeded with the Formalin process even though the levels of cumene hydroperoxide did not conform to Wiley's own specifications.

Accordingly, we reject Wiley's contention that the judge's decision is erroneous for failing to give proper weight to Witter's testimony.

IV. MERITS OF SUBITEM 1.a.3

Item 1.a.3 alleges that a recognized hazard existed because the valves and vents of the reactor that exploded were not configured so as to discharge to a safe location away from employee work areas. The physical configuration of the reactor is undisputed. The vent at the top of the condenser tower above the reactor, 47 feet above ground, was curved and pointed downward. There was also a pressure relief valve on the reactor itself. Although this valve could not be located after the explosion, the compliance officers determined from their investigation that it simply discharged into the atmosphere 10 to 12 feet above the ground without being diverted. Finally, there was another relief valve on the second level of the condenser platform which presented the same problem. The compliance officers described several methods by which these conditions could be abated.[7] There is also no dispute that both methylene chloride and cumene hydroperoxide are hazardous materials; among other evidence, Wiley's own production manual contains "safety information" which states that both chemicals are corrosive or hazardous to the skin and eyes.

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[7]Compliance officer Amanda Lange testified that diverting the vent to a catch tank, header pipe, or similar safe location would have been a feasible means of abatement. According to compliance officer Dennis Collins, other mechanisms into which hazardous materials can be diverted include scrubbers that can neutralize caustic or acidic materials or flares to burn off the material, and such materials can also be discharged from locations sufficient to allow the material to disperse into the atmosphere without coming into contact with employee work areas. He had been involved in at least one case where this means of discharge was in issue. Judge Schoenfeld did not consider Collins qualified to give an expert opinion as to the design and operation of discharge systems but did give weight to his testimony to the extent Collins described mechanisms he had observed during inspections of other chemical manufacturing companies.

Moreover, the record clearly establishes not only that the vents and valves were positioned over and facing employee work areas but also that discharges from the valves and vents were known to occur. The reactor was heated and cooled by steam and water lines, respectively, which were either controlled or capable of being controlled at the reactor itself, and Carry Cunningham, the production supervisor, specifically stated that employees would have occasion to work at the reactor pad. Shortly before the accident occurred, William F. Darling, Sr., an employee who was assisting Wears, observed material pouring off the second floor of the tower. Wears then went outside the building to the tower and did something Darling could not identify which stopped the flow of raffinate. Some of the raffinate fell onto Wears; when he returned, he used Wiley's emergency shower to wash it off the upper part of his body. In addition, on one prior occasion there had been a discharge of liquid from the vent when sodium metabisulphite was being used as a reducing agent.

In affirming the citation allegation, the judge relied in part on the testimony of Witter, who conceded on cross-examination that a relief valve which discharged onto an employee work location would not be considered a safe work practice. The judge further determined that in any event, allowing toxic or heated chemicals to be discharged into employee work areas is an obvious hazard for which no particular expertise is necessary to establish recognition. In concluding that this hazard existed in Wiley's worksite, the judge further found that the discharge of hazardous materials into a work area was reasonably predictable. On review before us, Wiley contends that the judge took Witter's testimony out of context because Witter otherwise testified that the location of the vent and valves conformed to industry standards and would not be recognized as unusual or hazardous. Wiley also contends that the reactor and condenser tower where Wears went to shut off the discharge was not in fact a work area and that Wears violated his training and instruction by going to the reactor itself. Lastly, Wiley contends, as it did before the judge, that it fulfilled

its duty under section 5(a)(1) because it could not have reasonably anticipated that a discharge would occur requiring an employee at the production tower, since after switching to Formalin, it had never experienced any discharges during any distillation operation prior to the accident.

While the Commission has authority to make its own factual findings, it is the province of the judge to resolve factual issues and to determine how to weigh conflicting testimony. *Sanders Lead Co.*, 15 BNA OSHC 1640, 1641, 1991-93 CCH OSHD ¶ 29,690, p. 40,260 (No. 87-260, 1992) and cases cited therein; *Seibel Modern Mfg. & Welding Corp.*, 15 BNA OSHC 1218, 1228-29 & n.15, 1991 CCH OSHD 29,442, p. 39,685 & n.15 (No. 88-821, 1991). Moreover, we have said that a judge's findings are ordinarily entitled to deference even if a different evaluation of the evidence and different findings might also be equally reasonable. *Okland Constr. Co.*, 3 BNA OSHC 2023, 1975-76 CCH OSHD ¶ 20,441 (No. 3395, 1976). In this case, we have no basis on which to set aside the judge's findings. Rather, the preponderance of the evidence clearly supports the judge's determination that the configuration of the reactor valves and vents presented a recognized hazard.

As the judge correctly noted, a hazard may be considered recognized even in the absence of expert testimony or testimony of those familiar with the industry. Not only could the judge reasonably find on this record that the chemical manufacturing industry would regard the discharge of hazardous substances onto an employee work area as a hazard, but his conclusion that such a hazard is an obvious one as well is also reasonable. *See Kelly Springfield Tire Co. v. Donovan*, 729 F.2d 317, 321 (5th Cir. 1984), *aff'g* 10 BNA OSHC 1970, 1982 CCH OSHD ¶ 26,223 (No. 78-4555, 1982) ("obvious and glaring" hazard); *Litton Systems, Inc., Ingalls Shipbuilding Div.*, 10 BNA OSHC 1179, 1182, 1982 CCH OSHD ¶ 25,817, p. 32,270 (No. 76-900, 1981) (hazard of operating a 30-ton crane with obstructed view in an area customarily used by employees is "a matter of common knowledge"). The evidence also plainly supports the judge's findings that Wiley's worksite

was not free from this hazard because the base of the reactor was an area where employees could be expected to have occasion to go to perform work and because discharges of material could reasonably be anticipated. Regardless of whether, as Wiley notes, it had never previously experienced a discharge of raffinate while using Formalin, as discussed above with respect to subitem 1.a.2, the company was on notice that its process development was inadequate and that there was a potential for a violent discharge of material due to the presence of excessive levels of unreacted cumene hydroperoxide. The risk of injury to employees, not the specific incident or accident that results in injury, is the relevant consideration in determining the existence of a recognized hazard. *Waste Management of Palm Beach, Div. of Waste Management, Inc. of Florida*, 17 BNA OSHC 1308, 1309, 1995 CCH OSHD ¶ 30,841, p. 42,891 (No. 93-128, 1995); *Kelly Springfield*, 10 BNA OSHC at 1973, 1982 CCH OSHD at p. 33,113. Accordingly, we conclude that the judge properly affirmed this subitem.

V. MERITS OF THE SECTION 1910.120 ALLEGATIONS

A. Section 1910.120(q)(3)(I)

The cited standard provides as follows:

§ 1910.120 Hazardous waste operations and emergency response.

(q) *Emergency response to hazardous substance releases*

. . . .

(3) *Procedures for handling emergency response.* (I) The senior emergency response official responding to an emergency shall become the individual in charge of a site-specific Incident Command System (ICS). All emergency responders and their communications shall be coordinated and controlled through the individual in charge of the ICS assisted by the senior official present for each employer.

Assistant city fire chief Anita Stickle was the designated on-scene commander. She controlled all access and directed that yellow warning lines be placed to indicate the "hot zone," the area having restricted entry. The first Wiley representative to come to the site in response to the explosion was the plant manager, Morehart, and David Wiley subsequently

joined him. Although Wiley and Morehart initially reported to the command post, in Stickle's view, they did not advise her of their intention to enter the premises, which were within the designated hot zone. Rather, in Stickle's words, they "disappeared" or would "drift away" into the hot zone and the building itself. They were told more than once that they were not permitted in the area, but each time they would return and go back in again. Eventually, they had to be escorted out by a firefighter. While it is not clear precisely when the warning lines were put in place, Stickle testified that they entered the building after the lines had been set up. When Stickle determined that Wiley was trying to retrieve notebooks describing its inventory and Material Safety Data Sheets ("MSDS"), she sent firefighters into the building to get these documents, which she intended to use to determine what chemicals and hazards existed at the facility.

Wiley testified that he and Morehart entered the building to see if they could identify any of the chemicals involved in the fire. He did not notice any yellow tape in the area, but he conceded that a firefighter did ask them to leave. He also did not dispute that he returned but claimed that he did so only after the fire was out and he observed the fire trucks preparing to depart. He also asserted that he was asked to enter the facility at this time by a representative of the state fire marshall's office who was conducting an arson investigation. Stickle, on the other hand, testified that while the fire was under control at this time, the chemical hazard still existed and a hot zone was still in place. She also stated that no state fire marshall was at the scene. Morehart corroborated Wiley's testimony, and he also denied that he and Wiley were escorted out of the area.

Judge Schoenfeld determined that under the facts here, Wiley's representatives were under the control of the fire department until emergency operations were terminated. He found that they entered the premises contrary to the express instruction of the incident commander and therefore "failed to coordinate" with the incident commander as required by the standard. The judge also made a specific credibility finding in favor of Stickle based

on demeanor and lack of self-interest on the issues of whether a state fire marshall was present and whether warning tape was in place, and he concluded that Wiley's testimony regarding the absence of tape was inconsistent with Wiley's concession that he was escorted out. In any event, the judge concluded, even assuming there was in fact no tape visible, Wiley knew or should have known that he was entering an area the incident commander did not want him to go into. The Commission will ordinarily accept a judge's evaluation of the credibility of witnesses based on factors uniquely within the province of the judge to evaluate, such as demeanor. *Waste Management*, 17 BNA OSHC at 1309-10, 1995 CCH OSHD at p. 42,891; *United States Steel Corp.*, 9 BNA OSHC 1641, 1644, 1981 CCH OSHD ¶ 25,282, p. 31,252 (No. 76-5007, 1981). Wiley has not shown any basis for us to overturn the judge's credibility determination or to disturb his factual findings.[8]

Wiley also raises issues regarding the applicability of section 1910.120(q)(3)(I). Judge Schoenfeld rejected Wiley's argument that the standard applies only to the incident commander. The judge concluded that it would be unreasonable to interpret the standard to mean that only the commander could be cited while employers having employees at the scene could not be cited for failure to coordinate with the commander. While we agree with the judge on this point, Wiley's argument before us is somewhat different inasmuch as on review Wiley asserts that only specifically trained personnel such as firefighters are subject to the coordination of the incident commander.[9]

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[8]However, we slightly modify the judge's findings in one minor respect. While Wiley conceded that a firefighter asked him to leave, his testimony is ambiguous on whether he and Morehart were personally escorted out. We therefore conclude that Wiley corroborated Stickle's testimony with respect to whether he and Morehart were ordered out of the hot zone but not as to whether a firefighter accompanied them to ensure that they left.

[9]Wiley also contends on review that the standard imposes no requirement that responders subject to the standard actually comply with the commander's instructions. As the judge stated, the standard cannot reasonably be construed so as to exempt anyone except the

(continued...)

Wiley's contention is contrary to both the language of the standard and its intent as indicated in its preamble. The standard expressly defines an "emergency response" as "a response effort by employees from outside the immediate release area *or* by other *designated* responders (i.e., mutual-aid groups, local fire departments, etc.)" Section 1910.120(a)(3) (emphasis added). The preamble to the standard makes even more explicit that it is not limited to specialized response personnel.[10] For instance, the Secretary emphasized that his "decision to propose coverage of *all* emergency response" (emphasis added) was based on "the high risk associated with emergency response by untrained and unprotected employees." 54 Fed. Reg. 9298 (1989). In addition, the Secretary offered the following illustration of the application of section 1910.120(q):

> In paragraph (q) OSHA is covering those emergency response situations that occur at locations other than uncontrolled hazardous waste sites and RCRA TSD facilities [sites covered by the Resource Conservation and Recovery Act of 1976 or by regulations under that Act]. . . . [S]ites covered by this paragraph would included hazardous substance releases at chemical manufacturing facilities . . . .
>
> A typical scenario where this paragraph would be applicable would be the emergency response to a derailed tank car containing a hazardous substance that has begun to leak its contents into the atmosphere. The emergency re-

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[9](...continued)
incident commander for being cited for failing to coordinate activities. Furthermore, the standard expressly requires that all responders be "controlled" through the incident commander; that language clearly denotes compliance with the incident commander's instructions.

Wiley on review no longer argues, as it did before the judge, that it is exempt under section 1910.120(q)(1) because it has an emergency response plan in conformity with section 1910.38 and otherwise meets the requirements of section 1910.120(q)(1).

[10]While we believe that the plain wording of the standard clearly indicates its scope, to the extent any ambiguity exists, it is appropriate to look to the preamble to determine how the standard is to be interpreted. *American Sterilizer Co.*, 15 BNA OSHC 1476, 1478, 1991-93 CCH OSHD ¶ 29,575, pp. 40,015-16 (No. 86-1179, 1992).

> sponse to this type of accident would usually include the first responders (i.e., *witnesses, police, employees on the train*), the first dispatched-responsers (i.e., the first due rescue and fire apparatus), [and] any multiple-alarm dispatches (i.e., additional fire and rescue apparatus [)] . . . .

Id. at 9309 (emphasis added).

For these reasons, we reject Wiley's argument that the cited provision does not apply and we conclude that the judge properly affirmed this item.

B. Section 1910.120(q)(3)(iv)

In this item the Secretary alleges that Wiley and Morehart were not using self-contained breathing apparatus ("SCBA") while in the hot zone contrary to section 1910.120(q)(3)(iv), which requires as follows:

> Employees engaged in emergency response and exposed to hazardous substances presenting an inhalation hazard or potential inhalation hazard shall wear positive pressure self-contained breathing apparatus while engaged in emergency response, until such time as the individual in charge of the ICS determines through the use of air monitoring that a decreased level of respiratory protection will not result in hazardous exposures to employees.

Because the nature of the hazardous materials present at Wiley's facility was not known at the time, Stickle prescribed full protective gear for the hot zone, including SCBA. Protective gear was worn by the firefighter who escorted Wiley and Morehart out and also by the firemen sent in to retrieve the notebooks and MSDS's. Wiley, on the other hand, testified that the fireman who first approached him was not wearing a respirator and that no firemen were wearing respirators when they returned. While Morehart testified that an emergency response team from Dow Chemical, which supplied the chemicals Wiley used, did wear full protective clothing including SCBA when they entered the area after the fire was extinguished in order to monitor for any hazardous environment, he claimed that Stickle never informed him that personal protective equipment was required.

In affirming this item, the judge concluded that regardless of whether Wiley may have thought that SCBA was no longer required after the fire had been brought under

control, a violation existed as a result of Wiley's initial entry, and he concluded that Stickle did not have an obligation to specifically inform persons who have been instructed not to enter a hazardous area that they must use protective equipment if they do enter. Wiley takes exception to these findings, and it contends that no violation was shown because the Secretary adduced no evidence to establish that there was exposure to substances that would be hazardous if inhaled. It also asserts that the citation should be vacated for lack of knowledge of the alleged hazardous conditions because its personnel were not informed of a need for protective equipment and firefighters were not wearing such equipment. We disagree.

There is no dispute on the facts that Wiley and Morehart did not use SCBA when they entered an area which had been designated for such equipment by the incident commander, Stickle. While there is no evidence that either cumene hydroperoxide or methylene chloride present an inhalation hazard, contrary to Wiley's argument, the standard depends not on the actual existence of such a hazard but rather on a determination by the incident commander that there is at least a potential for such a hazard. The facts establish that Stickle made such a determination in accordance with the terms of the standard because at the time she did not know what materials or substances were at the site. Furthermore, we agree with the judge that it would be inappropriate to excuse Wiley's personnel for not having knowledge of Stickle's designation of the area as one requiring breathing apparatus where Wiley's own actions were such as to be responsible for Stickle's failure to make that specifically known. An employer has a general obligation to inform itself of the hazards present at the worksite and cannot claim lack of knowledge resulting from its own failure to make use of the sources of information reasonably available to it. *E.g.*, *Hamilton Fixture*, 16 BNA OSHC 1073, 1087, 1993-95 CCH OSHD ¶ 30,034, p. 41,182 (No. 88-1720, 1993), *aff'd without published opinion*, 28 F.3d 1213 (6th Cir. 1994); *Bland Constr. Co.*, 15 BNA OSHC 1031, 1036, 1991-93 CCH OSHD ¶ 29,325, p. 39,396 (No. 87-992, 1991). Moreover, Wiley had a duty to consult with Stickle under the explicit terms of section

1910.120(q)(3)(I) which requires "coordination" with the incident commander, that is, Stickle. Lastly, assuming without deciding that the use or lack of use of SCBA by firefighters is relevant to whether Wiley violated the standard by not using it, as we have previously noted, the judge found Stickle's testimony to be more credible than that of Wiley. We have no basis not to give dispositive weight to Stickle's testimony that firefighters were using SCBA, particularly as her testimony is in accord with Morehart's testimony that the required equipment was being worn by the Dow Chemical personnel when they came to the site.

For these reasons we conclude that the judge properly affirmed this item.

VI. CONCLUSION

The judge assessed penalties of $1400 each for subitems 1.a.2 and 1.a.3, representing a pro rata portion of the aggregate penalty of $7000 the Secretary had proposed for the originally-cited five subitems of item 1. The judge also assessed the proposed penalties of $3000 each for items 5 and 6. Neither party takes exception to the judge's penalty assessment or presents any argument regarding the amount of an appropriate penalty. Accordingly, we affirm the judge's penalty assessments. The judge's decision is affirmed.

Stuart E. Weisberg
Stuart E. Weisberg
Chairman

Velma Montoya
Velma Montoya
Commissioner

Dated: March 25, 1996

UNITED STATES OF AMERICA
OCCUPATIONAL SAFETY AND HEALTH REVIEW COMMISSION
One Lafayette Centre
1120 20th Street, N.W. — 9th Floor
Washington, DC 20036–3419

PHONE:
COM (202) 606–5100
FTS (202) 606–5100

FAX:
COM (202) 606–5050
FTS (202) 606–5050

SECRETARY OF LABOR
Complainant,
v.
ORGANIC TECHNOLOGIES, INC.
Respondent.

OSHRC DOCKET
NO. 91-3275

NOTICE OF DOCKETING OF ADMINISTRATIVE LAW JUDGE'S DECISION

The Administrative Law Judge's Report in the above referenced case was docketed with the Commission on May 25, 1994. The decision of the Judge will become a final order of the Commission on June 23, 1994 unless a Commission member directs review of the decision on or before that date. ANY PARTY DESIRING REVIEW OF THE JUDGE'S DECISION BY THE COMMISSION MUST FILE A PETITION FOR DISCRETIONARY REVIEW. Any such petition should be received by the Executive Secretary on or before June 14, 1994 in order to permit sufficient time for its review. See Commission Rule 91, 29 C.F.R. 2200.91.

All further pleadings or communications regarding this case shall be addressed to:

Executive Secretary
Occupational Safety and Health
Review Commission
1120 20th St. N.W., Suite 980
Washington, D.C. 20036-3419

Petitioning parties shall also mail a copy to:

Daniel J. Mick, Esq.
Counsel for Regional Trial Litigation
Office of the Solicitor, U.S. DOL
Room S4004
200 Constitution Avenue, N.W.
Washington, D.C. 20210

If a Direction for Review is issued by the Commission, then the Counsel for Regional Trial Litigation will represent the Department of Labor. Any party having questions about review rights may contact the Commission's Executive Secretary or call (202) 606-5400.

FOR THE COMMISSION

Ray H. Darling, Jr.

Date: May 25, 1994

Ray H. Darling, Jr.
Executive Secretary

DOCKET NO. 91-3275

NOTICE IS GIVEN TO THE FOLLOWING:

Daniel J. Mick, Esq.
Counsel for Regional Trial Litigation
Office of the Solicitor, U.S. DOL
Room S4004
200 Constitution Ave., N.W.
Washington, D.C. 20210

Benjamin T. Chinni
Associate Regional Solicitor
Office of the Solicitor, U.S. DOL
Federal Office Building, Room 881
1240 East Ninth Street
Cleveland, OH 44199

Michael S. Holman, Esq.
Bernadette Bollas, Esq.
Sarah J. BeBruin, Esq.
Bricker & Eckler
100 South Third Street
Columbus, OH 43215

Michael H. Schoenfeld
Administrative Law Judge
Occupational Safety and Health
Review Commission
One Lafayette Centre
1120 20th St. N.W., Suite 990
Washington, DC 20036 3419

00103532123:05

UNITED STATES OF AMERICA
OCCUPATIONAL SAFETY AND HEALTH REVIEW COMMISSION
One Lafayette Centre
1120 20th Street, N.W. — 9th Floor
Washington, DC 20036–3419

PHONE:
COM (202) 606–5100
FTS (202) 606–5100

FAX:
COM (202) 606–5050
FTS (202) 606–5050

SECRETARY OF LABOR,	:	
Complainant,	:	
v.	:	Docket No. 91-3275
WILEY ORGANICS, INC., d/b/a ORGANIC TECHNOLOGIES,	:	
Respondent.	:	

Appearances:

Mary Ann Garvey, Esq.
Christopher J. Carney, Esq.
Office of the Solicitor
U.S. Department of Labor
For Complainant

Michael S. Holman, Esq.
Bernadette J. Bollas, Esq.
Sarah J. DeBruin, Esq.
Bricker and Eckler
Columbus, Ohio
For Respondent

Before: Administrative Law Judge Michael H. Schoenfeld

DECISION AND ORDER

Procedural History

This case arises under the Occupational Safety and Health Act of 1970, 29 U.S.C. § § 651 - 678 (1970) ("the Act").

Having had its worksite inspected by compliance officers of the Occupational Safety and Health Administration, Wiley Organics, Inc., ("Respondent" or "Organic Technologies")[1] was issued three citations alleging numerous violations of the Act. Respondent timely contested. Following the filing of a complaint and answer and pursuant to a notice of hearing, the case came on to be heard in Columbus, Ohio on July 12 through 16 and July 26 through 29, 1993.[2] No affected employees sought to assert party status. Both parties have filed post-hearing briefs and reply briefs.

Jurisdiction

Complainant alleges and Respondent does not deny that it is an employer engaged in the business of chemical manufacturing. Respondent does not deny that it uses tools, equipment and supplies which have moved in interstate commerce. I find that Respondent is engaged in a business affecting interstate commerce.

Based on the above finding, I conclude that Respondent is an employer within the meaning of § 3(5) of the Act.[3] Accordingly, the Commission has jurisdiction over the subject matter and the parties.

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[1] Despite any differentiation between the legal entities Wiley Organics, Inc., and Organic Technologies, the names are used interchangeably in this decision.

[2] At the beginning of the hearing, the Secretary vacated Items 7, 8, 9, 11, 21(b), 23, 24, 25, 29, 30 and 31 of Citation Number 1, as well as Item 3 of Citation Number 3. Organic Technologies agreed to withdraw its Notice of Contest to Citation Number 1, Items 3, 4, 10, 12, 13, 21(a), 26, 27 and 28 as well as Citation Number 3, Items 1 and 2 (Tr. 78). The Secretary also vacated Item 1(a)(1) of Citation Number 1 (Tr. 80). Thus, evidence at the hearing was taken as to Citation Number 1, Items 1(a)(2) through 1(a)(5), 5 and 6 (Tr. 7, 78). The parties agreed that a penalty of $12,000 was appropriate for those items to which contest was withdrawn (Tr. 78).

[3] Title 29 U.S.C. § 652(5).

Discussion

Organic Technologies, ("Respondent"), a manufacturer of chemicals, is owned by Wiley Organics, Inc. It has manufacturing facilities in Columbus, Newark and Coshocton, Ohio. On or about August 15, 1988, ARCO Chemical Company ("ARCO") entered into a two year contract with Respondent (R-42)[4] under which Respondent was to manufacture four Chiral Glycidols, including R--Glycidol, a chemical used in epoxy formulations and in pharmaceuticals (Tr. 595). As a "toll manufacturer," Organic Technologies produced R-Glycidol exclusively for ARCO. Organic Technologies obtained the process for manufacturing R-Glycidol from ARCO and the right to be the exclusive supplier of R-Glycidol to ARCO. As part of the agreement, ARCO had exclusive rights to any process developments or improvements developed by Organic Technologies and was entitled to a share of any cost or material savings developed by Organic Technologies in the processing of R-Glycidol. Organic Technologies stood to make more money if it could improve the efficiency of the process or by increasing the recovery of Methyl Chloride by using a different type of distillation procedure. (Tr. 1427). Under the agreement with Organic Technologies, ARCO could review all procedures and equipment used by Organic Technologies to produce R-Glycidol. ARCO had the contractual authority to implement procedures and require actions with respect to the production of R-Glycidol when it considered the change in process or procedure to be important to safety. Sales of R-Glycidol to ARCO represented about five or ten per cent of Organic Technologies' business.

A by-product of the production of R-Glycidol is a liquid mixture known generically as "raffinate." The raffinate generated in the R-Glycidol process consisted of, among other things, Methylene Chloride, Cumene Hydroperoxide, Alpha Cumyl Alcohol and Cumene. According to David Wiley, it was originally anticipated that the raffinate resulting from the process at Organic Technologies would be disposed of as waste. The raffinate was however, a hazardous product. Organic Technologies had to pay hazardous waste disposal fees to dispose of the untreated raffinate. It was early realized that if the amount of Cumene

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[4] References to the record in the matter are as follows; Complainant's Exhibit, C-; Respondent's Exhibit, R-; Transcript of proceedings; Tr-.

Hydroperoxide in the raffinate could be reduced or eliminated before disposal Organic Technologies could achieve significant savings in the hazardous waste disposal costs. Such savings would be shared with ARCO. Apparently, early in the relationship, ARCO suggested that treating the raffinate with Trimethylphosphite to lower the amount of the hazardous Cumene Hydroperoxide in the raffinate. (Tr. 624-25, 1453-54). Organic Technologies never used Trimethylphosphite but suggested using Sodium Metabisulfite instead. ARCO agreed and the Sodium Metabisulfite treatment was tested at Organic Technologies and put into production. (Tr. 1431). ARCO personnel were made aware of and approved the change from Trimethylphosphite to Sodium Metabisulphite (Tr. 1432). ARCO had, on at least two occasions, issued written instructions to Organic Technologies as to procedures to be used in the R-Glycidol manufacturing process (R-43, 44). In meetings with ARCO, David Wiley, chief executive officer of Organic Technologies, introduced the proposal to change the reducing agent from Sodium Metabisulfite to Formalin.[5] Organic Technologies introduced the Formalin into its full scale production of R-Glycidol in mid to late March 1991 (Tr. 635). On the night of April 24, 1991, during the course of distilling a batch of previously treated (reduced) raffinate, a catastrophic explosion and fire occurred. The conflagration was of such a size that emergency services from several communities were called to the scene. One Organic Technologies employee died as a result of injuries received.

Respondent was issued a citation alleging, among other things, five violations of § 5(a)(1) of the Act, 29 U.S.C. 659(a)(1), the "general duty clause."[6]

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[5] Formalin is the trade name of a mixture of Formaldehyde, Methyl Alcohol, Methanol and water in a specified ratio. The terms are used interchangeably in this decision.

[6] Section 5(a)(1) provides:

> Sec.5. (a) Each employer - -
>
> (1) Shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or likely to cause death or serious physical harm to his employees.

The Secretary maintains that the gravamen of the second alleged general duty clause violation encompasses the claim that Respondent switched reducing agents from Sodium Metabisulfite to Formalin "without adequately researching the efficacy of Formalin as a reducing agent for Cumene Hydroperoxide in raffinate." The Citation, Item 1(a)(2), concerning the change in process alleges;

> Formulation changes were made by Organic Technologies, Inc. to the "Raffinate Waste" including, but not limited to, replacing sodium meta bisulphite with formaldehyde in the reduction and treatment of peroxides. The company made the changes without re-evaluating the adequacy of the N1001 reactor vessel and its safety line and valve to ensure its ability to safely handle runaway reactions and fire load situations.

The Complaint, ¶ V(e)(2), described the alleged violation as "[f]ormulation changes were made without reevaluating the adequacy of the reactor vessel."

While the above language does not specifically identify the general adequacy of Respondent's preparation for the process change as the central issue, implicit in the allegation in the citation is the question of the degree of Respondent's preparation for the switch to Formalin.[7] The Secretary maintains that Respondent itself raised the issue in its pleadings, citing Respondent's Motion for Partial Summary Judgment and Respondent's opening statement at the hearing (Tr. 24-25). The Secretary, relying on Rule 15(b), Fed.R.Civ.P., argues that the issue, having been tried by the consent of the parties, must be treated in all respects as if it had been raised in the pleadings.

Pointing to the narrow language of Item 1(a)(2) of the citation, Respondent argues that the Secretary "changed his theory of the case and instead attempted to argue at the

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[7] During the course of the hearing, the Secretary placed his emphasis on the assertions that Respondent's research into and preparation for the change from Sodium Metabisulfite to Formalin in the reduction process was inadequate because the persons designated by Respondent to investigate and design the process change were not qualified to do so; that their preparation for the investigation into the process change, particularly their literature search, was inadequate; that Respondent's laboratory testing methodology to investigate the effects of the process change were inadequate; and that Respondent's use of tritation as its basic method of quantitative analysis of the results of using Formalin as a reducing agent, did not meet minimally acceptable scientific standards.

hearing that the analytical test methodology...was deficient." (R.Brief. p. 17). Respondent's too narrow reading is rejected.

Respondent's Prehearing Statement, Page 2, § § I.A.2.c - d, acknowledges, as issues in the case:

> c. What was the nature and extent of the reevaluation undertaken prior to the formulation change (sodium metabisulfite replaced by formalin) at issue ?
>
> d. Did the formulation change at issue create a significant risk ?
>
> e. Did the formulation change create any hazard that was generally recognized by industry or Respondent ?

Respondent was thus well aware of the issues surrounding the adequacy of its preparation and execution of the formulation change from Sodium Meta Bisulfite to Formalin (Tr. 858-862). Moreover, at the outset of the hearing, at the request of the parties and with the approval of the Judge, each party presented a summary of its forthcoming position and evidence (Tr. 4-47). After a recess, the Judge informally informed the parties of his view of the case as presented by the evidence outlined by the parties. At that time, the Judge outlined for the parties the issues as he saw them regarding the adequacy of Respondent's preparation for the process change (Tr. 55-59).

To the degree that the Secretary's case deviated from the more narrow wording of the citation items, Respondent was well on notice that the trial would encompass factual and legal questions surrounding its general preparation for the process change. Respondent is not prejudiced and indeed, presented both evidence and argument encompassing its general preparation for the process change. Respondent has tried the issue by consent.

The evidence of record presents a detailed history of the activities surrounding the change in the raffinate treatment process. As a whole, that evidence shows that Respondent's commencement of production of R-Glycidol using Formalin to reduce the Cumene Hydroperoxide in the raffinate was premature in that ARCO had expressed its reservations, taken the proposed change in process under advisement for study and not yet communicated to Respondent any final conclusions, recommendations or authorizations regarding the

proposed change in process. Moreover, production was begun despite the fact that pilot batches using the new process produced results inconsistent with the results anticipated by Respondent's own laboratory testing.

In August 1988 ARCO and Wiley Organics entered into a contract under which Wiley Organics was to produce R-Glycidol (R-42). Jack Etheridge, a Wiley Organics Vice President (Tr. 1422) who negotiated the contract (Tr. 1424-1426) testified that as obtained from ARCO, the original process used a different reducing agent (Tr. 1450). He recalled (Tr. 1454) that prior to the initial running of the process at Organic Technologies, the decision was made to switch the reducing agent to Sodium Metabisulfite. He thought that Trimethylphosphide was originally to be used as the reducing agent for removal of Cumene Hydroperoxide from the raffinate. David Wiley, he said, was concerned that Trimethylphosphate, a product of that reaction, was highly toxic and a suspected carcinogen. David Wiley, according to Etheridge, thus requested, and the parties agreed, to use the Sodium Metabisulphite for the reducing agent (Tr. 1431). Etheridge recalled that the testing work (to determine whether Sodium Metabisulfite would be a good reducing agent) was done by Organic Technologies, not ARCO. Etheridge stated, "[t]here was no express written authorization from ARCO authorizing Wiley to make that change, I don't think it was required" (Tr. 1432).

As early as May 1990, Organic Technologies facilities were toured by ARCO personnel for the purpose of examining facets of the R-Glycidol process (C-18, p.16). According to Thomas A. Dobbins, Organic Technologies' Director of Research and Development (Tr. 763), in middle or late January 1991 David Wiley requested him to find alternative ways to reduce the Cumene Hydroperoxide in the raffinate (Tr. 1022). Dobbins stated that Wiley both supervised and assisted him (1023, 1028). By late January 1991 Dobbins said he had eliminated the use of catalysts as not safe (Tr. 1028).

Shortly thereafter, from February 4 through February 8, 1991, the Organic Technologies facilities were again visited by a team from ARCO (Sowa and Bogaert) who wanted to obtain more detailed information about the operating conditions at Organic Technologies (C-18, Pp. 27-8; R-44). This "manufacturing audit" covered the manufacturing and inventory practices related to the production of R-Glycidol (Tr. 1436). Part of the

purpose of the audit was to determine whether the equipment Organic Technologies was using was appropriate (*Ibid.*). The manufacturing audit was also designed to prepare for a later Hazardous Operations ("HAZOP") study (C-18, p. 27). During the manufacturing audit the ARCO personnel observed raffinate reduction in which Sodium Metabisulfite was being used (C-18, p. 55). At about that time, "some time in January, early February", according to David Wiley, Organic Technologies became "focused" on Formaldehyde as a reducing agent as a result of a conversation with a Dr. Joseph Delphini (Tr. 1121, see also, Tr. 1030). David Wiley could not recall who mentioned the use of Formaldehyde first but did recall that at the time of the conversation Organic Technologies had not yet done any experiments (Tr. 1118-19). Dobbins identified February 1991 as the time during which he conducted experiments.[8] He claimed that he reported his results to David Wiley and to Bogaert at ARCO (Tr. 1043, 1045). At least two previous changes in the R-Glycidol process were initiated by Organic Technologies. Etheridge, claiming to be unsure in his recollection (Tr. 1431) stated that he thought that some testing of the change from Sodium Metabisulfite to Formalin was done at Organic Technologies' Columbus facility. He claimed to "have a difficult time in remembering all the details" but thought he "was involved in running, perhaps, some of those reactions on the laboratory scale." (Tr. 1431) He claimed to know of no testing done by ARCO. He also maintained that Organic Technologies did not require authorization from ARCO to make such a change in the process although he also thought

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[8] The reliability Tom Dobbins' testimony as to the testing of alternative reducing agents is highly doubtful. Dobbins maintained, after several minutes of evasion and equivocation, that his laboratory notes and data, which were not destroyed by the explosion and fire, were given to David Wiley (Tr. 790-794). David Wiley testified that he could "not specifically recall (Dobbins) giving me the lab notes" (Tr. 1126). David Wiley claimed that he was "not aware of the location of the documentation" (Tr. 1124). He tried to imply that the volume of documents involved in the case ("boxes and boxes") and the number of different law firms he has had working on the case at one time or another were somehow the cause of the documentation being misplaced. Respondent's claim that David Wiley's explanation for the lack of the lab notes is "entirely plausible" is rejected. Moreover, the undated written summary of lab testing (R-19) is given no weight. Given the voluminous record keeping in other areas and the obvious importance, both scientifically and legally, of documentation of research, the "loss" of the lab notes raises a significant question as to the weight to be accorded the testimonial summaries of the testing offered by Dobbins and Wiley.

that such authorization was given by orally ARCO (Tr. 1431-32). He noted that in other circumstances when ARCO wanted Organic Technologies to take "immediate action" they communicated with Organic Technologies by contacting him or Morehart "by phone. . .[I]n important matters they would follow with a written communication" (Tr. 1432). He cited as examples of such communications exhibits R-33 and R-34 (Tr. 1433).

The first specific notice of record to ARCO that Organic Technologies was, in fact, experimenting with the substitution of Formaldehyde as a reducing agent is a facsimile letter, dated February 21, 1991 (R-25) from Dobbins to Bogaert which, according to Bogaert, followed a phone call from Dobbins in which he talked about a "new technique" to reduce raffinate. In response to Bogaert's request for details during the phone call, he received the February 21 fax from Dobbins (Tr 1049, C-18, p. 24.) Neither the phone call nor the fax indicated that Organic Technologies was scaling up or in production using the substitute. Dobbins agreed, describing the February 21, 1991 facsimile letter as "my initial substantive communication with Riocardo Bogaret regarding technical issues" (Tr. 1047-48). He stated, "this letter is the first time I ever briefly summarized the experiments that I was conducting in raffinate treatment" (Tr. 1047).

Only four days later, on February 25, 1991, ARCO, by facsimile letter thanked Etheridge for Organic Technologies' cooperation during the February 4-8, 1991 manufacturing audit. ARCO indicated that the information gathered would be useful for the upcoming HAZOP, scheduled to take place during the week of March 4th (R-44). ARCO identified two items (presumably noticed during the manufacturing audit) which "require immediate attention." ARCO also noted that after the HAZOP study they would "detail changes we require." (R-44).

During the week of March 4, 1991, ARCO conducted a HAZOP study at the Organic Technologies' facilities. Hazard and Operability Studies are designed to examine in great detail operations being conducted, identify items (parts, equipment or processes) which might present problems or hazards as well as needing replacement or repair and catalogue and set up priorities for the repair and maintenance work which needed to be done to prevent hazards or danger arising from the operations being studied. Etheridge, in more detail, described the HAZOP study as a very specific "line by line" review of the processes

and equipment related to the R-Glycidol manufacturing process to identify, limit or remove inefficiencies, inadequate equipment, inadequate personnel or improper procedures. The HAZOP study was done as a follow-up to the manufacturing audit. It was designed to discover any hazards associated with each step in the manufacturing process and to plan how such hazards could be reduced or eliminated. (Tr. 1436, 1560). The review was to be so thorough that "no stone would be unturned" (Tr. 1437).

There is no disagreement that the HAZOP meetings lasted a minimum of eight hours per day, Monday through Friday throughout the week of March 4, 1991 (Tr. 1236). In attendance for ARCO were Bogaret, Sowa and Levine (Tr. 1049, 1236; C-18, Pp. 29-33). Wiley and Dobbins attended for a short time on Friday afternoon, at the very end of the week-long meetings. According to Ted Virotsko, Respondent's Chief Operator, the proposal to change from Sodium Metabisulfite to Formalin was presented by Wiley and Dobbins to the ARCO people at about mid-day on Friday, the last day of a five day study which had been going on at Organic Technologies (Tr. 1239).

What transpired at the meeting on Friday afternoon is subject to some disagreement.

Respondent claims that information regarding Dobbins' experiments with changing the raffinate reduction process by switching from Sodium Metabisulfite to Formaldehyde was presented at the HAZOP meetings. David Wiley testified that he asked for time to attend the HAZOP meeting with the intention of introducing a "possible change" in the reduction process (Tr. 1113). He stated that he had Tom (Dobbins) make the presentation since he (Dobbins) conducted the lab work. (Tr. 1117). David Wiley described his involvement at the meeting as discussing the lab work with Dobbins (Tr. 1121). According to Dobbins, they discussed his experiments at the HAZOP meeting. He stated that it was "very probable" that he provided copies of documents relating to his experiments at the meeting (Tr. 1049). According to Dobbins, the material he presented to ARCO at the HAZOP meeting was a summary of his methods and results. He stated that there were discussions on the topic for more than an hour. At another point, he could not recall presenting any specific test data to the ARCO people and claims that ARCO never asked for any additional information from him as to his testing (Tr. 1075-1076). Dobbins acknowledged that ARCO attendees expressed some "concerns" (Tr. 1049-50).

Ricardo J. Bogaret, a Ph.D. chemical engineer working for ARCO attended both the manufacturing audit and HAZOP meetings. Both Bogaert and Etheridge indicated in their testimony that the manufacturing audit was designed, at least in part, to prepare for the HAZOP study (C-18, Pp. 31-31). Bogaert's testimony indicates that because ARCO had no notice at the manufacturing audit or any time before last afternoon of the week-long the HAZOP meetings of Wiley's wanting to commence with the change to using Formalin, the ARCO people at the HAZOP were unprepared to deal with any discussions surrounding the change to Formalin (C-18, p. 29-33). An ARCO report of March 15, 1991 confirms Bogaret's recollection of the impact of having no advanced knowledge of the proposed change in process. It states;

> One portion of the process which we had expected to HAZOP review was not, the bisulfite treatment of the raffinate to eliminate excess cumene hydroperoxide from methylene chloride solvent. Instead, an alternative procedure utilizing aqueous formaldehyde solution was quickly drafted and subjected to HAZOP review. This new process was represented by Mr. David Wiley as being a considerable improvement over the presently used bisulfite reduction.

(R-15).

Bogaert noted that diagrams and drawings of equipment which Organic Technologies had at the time of the manufacturing audit were taken back to ARCO for its experts "to amplify them and make them clear enough so they could be used in the HAZOP" (C-18, p.32). Then, at the HAZOP the diagrams of the machinery, as amplified and clarified by ARCO's experts, would be used to review the process in detail step by step seeking to uncover potential faults or hazards associated with each individual step (C-18, p. 31). Another ARCO memorandum, dated March 19, 1991, described as "preliminary" what was accomplished at the HAZOP in regard to the change in the reduction process. It was done, says the memo, "to uncover any gross problems that could ensue and to direct development work in this item." (R-16)

Bogaret noted that the Friday afternoon session of the week-long HAZOP meetings was the only one which David Wiley attended. He characterized David Wiley as being

"insistent" that reducing the raffinate with Formalin was better than reducing with Sodium Metabisulfite and that Organic Technologies was no longer going to use Sodium Metabisulfite. Bogaret's description of David Wiley as "insistent" on using Formalin is corroborated by Virotsko who testified that it was conveyed to ARCO that Organic Technologies was going to use the Formalin procedure (Tr. 1247). Bogaret testified that ARCO's main reservation was that ARCO did not know enough about using Formalin. Bogaert noted that ARCO, based on the manufacturing audit, had prepared to do a HAZOP on the Sodium Metabisulfite treatment of raffinate. It was only learned during David Wiley's presentation of March 8, that Organic Technology was considering changing to Formalin. Boagert and ARCO wanted time to study it. Bogaret reported that at the HAZOP meeting that afternoon everyone agreed that Dobbins and Bogaret would both do further studies. (C-18, p. 33). ARCO (Bogaret) chose to do further analytical studies because "ARCO had more analytical resources and would thus be in a better position to evaluate that technique" (C-18, p. 33).

Equally important is the nature of discussions the held at the HAZOP meeting regarding the scale-up by Organic Technoligies to processing larger quantities of raffinate using Formaldehyde.

Dobbins maintains that although he was present and did not "actively" participate, there were discussions of a scale-up of several hundred gallons (Tr. 1050). David Wiley agreed that he was "concerned" about scaling up the process using the Formaldehyde in place of the Sodium Metabisulfite;

> . . .in the sense that we're always concerned when we scale-up a reaction. So, that was discussed at some length with ARCO at the Hazard and Operability Study meeting. It was my understanding that they agreed to go ahead and conduct some small scale pilot plant runs in production equipment and at that point, I left [the HAZOP meeting [in] what I thought were very competent hands.

(Tr. 1128). At the hearing, it was David Wiley's recollection that at the HAZOP the participants did not get to consider the final phase of the process, the stripping of Methylene Chloride. Wiley testified that he merely presented the idea of switching to Formaldehyde and then;

> I left - - once we introduced the idea (of switching to Formalin), I thought my mission was largely over because we had experts from ARCO that were going to work with our people to develop operating instructions for the pilot scale work . . . .

(Tr. 1131). Only after Wiley and Dobbins left the meeting were procedures for the use of Formalin worked out (Tr. 1239). Item 6 of the procedure established by those who remained at the HAZOP meeting directs that the reduction process was to "[c]ontinue until hydroperoxide concentration is < 1% [less than 1 per cent] of total calculated amount of formalin solution" (R-40).

During his deposition, Bogaret recalled that at the HAZOP meeting, Respondent was assigned the task of "checking out the viability" of using Formalin in the reduction of the raffinate. He also agreed that "checking out the viability of using Formalin" included the scaling up of the use of Formalin (C-18, p. 66). Dr. Bogaret, however, also stated in his deposition that, other than a phone discussion he initiated with Morehart regarding the ratio of surficant, ARCO received no information, questions or inquiries from Organic Technologies regarding the progress, problems or results of any scale-up test runs using Formaldehyde (C-18, Pp. 66-67).

Ted Virotsko, Respondent's Chief Operator, testified that there were no discussions at the HAZOP meeting as to the specific quantities of chemicals Wiley would be using in scale-up tests, "[t]here was no discussion as far as volumes" (Tr. 1247). He said that upon leaving the meeting;

> It was my understanding that we were going to utilize [the Formalin] procedure in a conservative manner to begin with . . .I mean small scale raffinate reduction using Formalin. . .it was my understanding that we were going to utilize this for small scale.

(Tr. 1248). Virotsko assumed at the HAZOP that Respondent would do the scale up because:

> That was the normal procedure as far as initially, you would institute small-scale runs and develop a data base as far as the behavior of the process, and then you would up scale to production size.

(Tr. 1256 - 1257).

A March 19, 1991 ARCO "progress report" (R-16) describes ARCO's desire for more information and experimentation with Formalin.

Sometime between March 15 and March 17, 1991, after the HAZOP meetings, Bogaret ordered tests run at ARCO on the use of Formalin as the reducing agent. He described the results as "puzzling" and said that he was "unsatisfied" with the results of the tests which were "inconclusive" as to whether Formalin was an effective reducing agent (C-18, Pp 38-41). He did not discuss the results of his testing with anybody at Organic Technologies (Id. p.40).

Almost simultaneously, Organic Technologies began ran scale-up operations using Formalin as the reducing agent. Virostko, as he had anticipated during the HAZOP study, instituted small scale runs of the process using Formaldehyde in order to "develop a data base as far as the behavior of the process, and then. . .up scale to production size (Tr. 1256-57). In preparation for the hearing, Virostko reviewed Organic Technologies' records as to the scale-up runs and produced a chart which included the information below (R-36).

SCALE-UPS ON USE OF FORMALIN - MARCH & APRIL 1991

#	Vessel	Volume of Raffinate Treated	Initial % Peroxide	Final % Peroxide	Date
1	N1001	300 Gallons	15.80	3.50	March 12
2	N1001	925 Gallons	11.50	1.90	March 13-14
3	N1001	1500 Gallons	16.80	1.80	March 14
4	N1001	1500 Gallons	3.50	- -	March 24
5	N1001	1500 Gallons	13.34	1.42	March 26
6	N1105	2622 Gallons	11.90	2.60	April 3-16
7	N1105	3000 Gallons	14.66	2.48	April 18-21

(See, R-36, Tr. 1296 -97) Virotsko noted that Organic Technologies never attained the degree of reduction of Cumene Hydroperoxide to less than 1% as the HAZOP procedures specified (Tr. 1298, R-40). Organic Technologies was thus aware from the very begining of its scale-up attempts that it was never able to duplicate the lab experimental results or achieve the level of reduction called for by the hastily drawn up HAZOP procedure. Nonetheless, it expanded the Formalin reduction of raffinate to production quantities of chemicals (Tr. 1299). Virotsko recalled,

> [t]here was some concern on my part and Don Lee's part and I believe other operational personnel that we were unable to get the [Cumene] Hydroperoxide concentration down below one percent.

Morehart, Respondent's Vice President, in reviewing the data included in the above chart, claimed at the hearing that the first run of 300 gallons basically concluded that the scale-up "confirmed" what had been seen in the experiments. He found nothing unusual in the second run (Tr. 1374-1375).

There was a follow-up meeting at an ARCO facility on April 11 & 12, 1991 attended by Etheridge and Morehart from Organic Technologies and Bogaert, Sowa and Shih for ARCO (Tr. 1375). Called a "checkpoint meeting," ARCO memos indicate that the subjects discussed included the HAZOP, manufacturing and production and environmental compliance (R-17).

Mr. Etheridge, although claiming a less than complete memory, stated that his recollection was that the use of Formalin was discussed at the follow-up meeting (Tr. 1441-1442). He testified "I know that we [Organic Technologies] were performing a scale up operations on the process and I believe that we communicated that information to ARCO at that meeting" (Tr. 1442).

As recalled by Morehart, all testing and scale up by Organic Technologies had been completed by the time of the follow-up meeting and Organic Technologies was, at that time, running the process of reducing the raffinate with Formalin at full production quantities (Tr. 1376). Morehart maintained that he was not aware of any problem Organic Technologies was having duplicating the experimental results in the scale-up and specifically denied being informed by Virostko that there was such a problem (Tr. 1408-1409). He did, however,

recall that he and Virotsko discussed peroxide levels and "how things were going" (Id.). Discussions about the peroxide levels during scale-up not being reduced to the levels reported to have been accomplished during experimentation by Dobbins were held (Tr. 1409). Morehart dismissed the differing readings of the peroxide levels achieved as "slight fluctuations" (Tr. 1409-1410). When Morehart learned from Virostko that the scale-up runs were not achieving the peroxide reductions that were expected based on Dobbins's experiments he "suggested" that Virostko call David Wiley because he was "much more familiar with the experimental results and what they could possibly suggest to correct the situation (Tr. 1413). Morehart was certain that David Wiley and Tom Dobbins were aware that scale-up was not producing the result anticipated by experimentation (Tr. 1410, 1414). Morehart also claimed that he discussed the issue with Bogaret at ARCO who;

> essentially confirmed that during his studies. . .he was seeing a similar result and that he was going on to use Gas Chromatography to check for the peroxide levels and he was noticing that if his titration maybe showed 2 percent, he was showing even less based on GC analysis.

(Tr. 1410).

An ARCO memorandum dated April 17, 1991, describes the activities at the "checkpoint meeting" of April 11 and 12, 1991 (R-17). It appears that Organic Technologies was under pressure from ARCO to increase its production of R-Glycidol. Adding a third shift and reducing the "cycle time" were recommended as ways to increase production. Table I, Items 80 -85 refer to raffinate treatment/procedure. Item 84, (study raffinate reduction with formalin) was assigned a "#1" priority with a target for completion set at 7/15 (R-17). It was assigned to Bogaert.

The fatal explosion at Organic Technologies took place one week after the April 17, 1991 memorandum during the processing of the second full-scale production run of R-Glycidol (Tr. 820). According to David Wiley, as of that date, "there was ongoing uncompleted work at ARCO involving their responsibilities with the raffinate treatment" (Tr. 1166).

A number of factual findings are warranted on this record. The evidence demonstrates that Organic Technologies had at least one prior experience with a change in

the R-Glycidol process which was discussed with and had specific approval from ARCO. In 1988 or 1989, prior to even running the first batch of R-Glycidol when Organic Technologies wanted to change from Trimethylphosphide to Sodium Metabisulfite as the raffinate reducing agent, ARCO's agreement was received before the production change was made. Although Organic Technologies had begun to explore and experiment with changing the reducing agent from Sodium Metabisulfite, and had even possibly "focused" on formaldehyde as a substitute, no mention of this was made to the ARCO team present at Organic Technologies 's plant for the manufacturing audit visit from February 4 through 8, 1991. One of the specific purposes of the audit visit, known to both ARCO and Organic Technologies, was to prepare for the detailed HAZOP study which would follow. Bogaret's specific testimony as to when ARCO first had knowledge of the possible change is credited over that of the rather vague assertions by Etheridge. The facsimile of February 21, 1991 (R-25) was Bogaret's first clear notice that Organic Technologies was moving towards a change in reducing agents. Etheridge's testimony is filled with vague recollections and claims of lack of clear memory. There is no indication that Etheridge, the designated contact person from Organic Technologies to ARCO (see R-44) was telling ARCO of Organic Technologies's Formalin experimentation yet Etheridge knew and understood the purpose of the HAZOP meetings and even helped to set them up (Tr, 1436-37).

There is also ample evidence that Organic Technologies had reason to move the process change along as quickly as it could. It had a financial share in any profits or savings realized. It was under pressure from ARCO to increase the amount of R-R-Glycidol it was producing. And ARCO was considered a very important client by Organic Technologies.

It is clear that Organic Technologies waited until the last moments of a long and complicated series of HAZOP meetings to bring up its proposed change to Formalin. Wiley and Dobbins left the HAZOP meeting after their presentation and did not stay for further discussions. David Wiley, at the HAZOP meeting was "insistent" on changing to Formalin even though no prior notice had been given to ARCO and despite the ARCO people expressing concern over the change.

Organic Technologies never told ARCO at the HAZOP meeting that it would actually go into full production using Formalin. Scale-up was discussed briefly, but there was no

discussion of production quantities. ARCO had no reason to believe that anything other than additional testing and experimentation with Formalin would be carried out after the HAZOP meetings. Even David Wiley understood that ARCO agreed that Organic Technologies would conduct some small scale pilot plant runs in production equipment (Tr. 1128). Respondent's Chief Operator, who took part in the HAZOP, anticipated only that formalin would be used on a small scale.

It is clear from the ARCO reports after the HAZOP that ARCO did not anticipate that Organic Technologies would be using production quantities at least until further discussions were held. Even by April 17, 1991, several weeks after the HAZOP meetings, and only one week before the explosion, ARCO was reporting that a target date of July 15, 1991 for the completion of Bogaert's raffinate treatment studies had been established and discussed at the April 11 and 12, 1991, checkpoint meetings.

The record also shows that ARCO's early testing found "puzzling results." Respondent's rush to production using the Formalin reduction method is also demonstrated by the fact that less than one week after the HAZOP meetings, it began scale-up trials using Formalin. Respondent's highly experienced Chief Operator (whom Respondent moved to be accepted as an expert witness) became concerned when scale-up runs did not reduce the Cumene Hydroperoxide in the raffinate to the levels specified in the procedure written during the HAZOP meeting or those predicted by Dobbins. Indeed, as the amount of raffinate treated approached production quantities the final percentage of peroxide remaining in the raffinate after treatment generally increased. Since Respondent knew the initial amount of Cumene Hydroperoxide in the untreated raffinate, it maintained that it could calculate the amount of Formalin necessary to reduce the Cumene Hydroperoxide. The Formalin was added in batches. After each addition of Formalin the raffinate was tested for the amount of Cumene Hydroperoxide remaining. According to Respondent's production records, the reductions did not proceed as expected. There were occasions when the percentage of Cumene Hydroperoxide in the raffinate appeared to increase after the addition of more formalin (Tr. 1301-1310; R-36, R-37). The Chief Operator spoke to a Vice President of Organic Technologies of his concern and was told merely to tell it to David Wiley. There is no indication that Etheridge, who was Organic Technologies chief point of

contact with ARCO, ever passed the information to David Wiley or any other management official. Nor did he send the results of scale-up testing to ARCO.

Respondent thus withheld negative or inconsistent information from ARCO. Although Etheridge testified that he "believed" that scale-up was discussed at the follow up meeting, there is no indication anywhere else of that. There is no evidence that ARCO was ever informed that the scale-ups at Organic Technologies were not producing anticipated results. The ARCO summary of the discussions at the follow-up meeting do not indicate that Respondent's scale-up activity was discussed or that production was discussed. Based on ARCO's other reports, it is reasonable to infer that such information would have appeared in the ARCO summary of the follow-up meetings if it had been discussed at those meetings. Respondent's expert found nothing abnormal in Organic Technologies doing scale-up runs using Formalin despite items relating to it being identified in the HAZOP as number 1 priority needing further study. He apparently would only immediately cease an operation if such a study concluded that the circumstances were "immediately dangerous to life or health" (Tr. 1564-65). Respondent's expert became hesitant and equivocal at best when asked if going into production quantities would also be regarded as normal (Tr. 1572-1573).

Organic Technologies officials knew that if ARCO specifically directed it to stop a particular operation, it would comply as it had in the past. By depriving ARCO of the information that the scale-up was not turning out as predicted or that Organic Technologies was actually starting on production quantities of raffinate, Organic Technologies was assured that ARCO would not stop the operation on that basis. Indeed, David Wiley knew at that time that ARCO was still engaged in experimentation seeking to gather more information about the process change and had a target date of July 15 for the completion of its studies. David Wiley thus had Organic Technologies in full-scale production while ARCO was still considering the problem.

The evidence as a whole reveals a series of consistent acts and omissions by Organic Technologies aimed at getting into full production using Formalin as the reducing agent on raffinate. Each of Respondent's acts and omissions, by itself, might not rise to the level of a violation of the Act. I am persuaded however, by the totality of the evidence as to Respondent's activities, that Respondent engaged in a pattern of conduct over the period

of several months prior to the fatal explosion which amounted to a violation of § 5(a)(1) of the Act.

The record as a whole portrays a pattern of conduct designed to speed up and increase the production of R-Glycidol, even though such actions meant exposing employees to risks greater than those which would have existed if Respondent more cautiously planned and experimented with the process change before instituting it on a full scale production basis. The record also warrants the conclusion that Respondent knew or reasonably should have known that the actions it took to put the change in process in place prematurely could be hazardous to employees. Proposed changes in the process were the subject of hurried and incomplete experimentation by Organic Technologies. Information about the process was not shared with ARCO at the time of its manufacturing audit. ARCO was not given notice sufficiently before the HAZOP study to prepare for a complete study of the proposed process change. Even during the HAZOP study meetings, the proposed change was presented to ARCO only at the very last few hours of a week-long meeting. The HAZOP participants from ARCO had to scramble and improvise in order to hurriedly and admittedly incompletely deal with the process change they thought was in the future. I am also persuaded that the facts also show that ARCO personnel left the HAZOP meeting believing that Organic Technologies would do some more experimentation and only small scale-ups using Formalin. ARCO had no reason to know or believe that Organic Technologies would actually go into production using the changed process. ARCO was kept in the dark by Organic Technologies. Throughout the scale-up tests at Organic Technologies red flags were waived each time a batch was run in which the amount of remaining Cumine Hydroperoxide was not reduced to the level anticipated by the procedure drafted at the HAZOP or to the levels Dobbins said was attainable. Warnings from Organic Technologies chief man on the spot that things were not as expected were ignored.

In sum, a preponderance of the evidence of record demonstrates that Respondent proceeded with scale-ups and went into full scale production of R-Glycidol using Formalin as a reducing agent knowing (perhaps by design) that ARCO, from whom it had

obtained the process[9], had not had enough time to research the change and despite the actual notice that what research had been done by ARCO and its by own Chief Operator raised concerns that the process was not performing as predicted by the initial laboratory research. I conclude that such a planned and considered course of conduct is violative of § 5(a)(1) of the Act.

Under § 5(a)(1) a hazard is recognized if either the industry in which Respondent is engaged, as whole, understands a particular condition to be hazardous or the cited condition or process is actually known by the employer to be hazardous. The amount of Cumene Hydroperoxide remaining in the raffinate after reduction is important because the raffinate, after reduction, was heated to distill off and recover Methylene Chloride. Both David Wiley and Tom Dobbins knew and understood that Cumine Hydroperoxide could be hazardous when heated and when in the presence of other chemicals.[10] Both also knew that Organic

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[9] Even if, as Respondent argues, the treatment of raffinate was a portion of the overall process which was not obtained from ARCO, there is sufficient evidence that the process change which gave rise to the hazard in this case was discussed with ARCO and that ARCO clearly expressed its reservations. Moreover, ARCO, as the toller, and as the larger, better staffed and equipped chemical company, was in a far better position to effectively evaluate the process change when it was proposed by Respondent.

[10] The parties vigorously debated whether iodometric titration was a proper analytical method for determining the level of cumene hydroperoxide in raffinate both before and after reduction. The Secretary claims that the method was ineffective and unacceptable. Respondent maintains that iodometric titration was the preferred method of analysis as demonstrated by standard scientific references, manufacturers of cumene hydroperoxide, and the preponderance of expert testimony. The issue need not be resolved.

In this regard, however, the claim made by both Wiley and Dobbins that the iodometric tritation results he got in his testing were confirmed by gas chromatography is rejected on credibility grounds. Although Dobbins maintains in several places in his testimony that gas chromatography was done as part of the laboratory work (*e.g.* Tr. 1033-1034). He stated that gas chromatography was done on "many" samples (Tr. 1034), or "in many cases" (Tr. 1035). There is no claim that it was done consistently or as part of a usual testing protocol. Moreover, at times when his attention was not directed towards the question of whether he had gas chromatography done there is no mention of it. For example, in his February 21, 1991 letter to Dr. Bogaert at ARCO (R-25) only tritation is mentioned. Similarly, he testified that in describing the "test methodology he used" to ARCO at the HAZOP meeting he mentions only iodometric tritation (Tr. 1049). That such data was confirmed by gas chromatography would have been important information to

Technologies was heating the post-reduction raffinate to temperatures significantly higher than its boiling point in order to remove as much Methylene Chloride as possible. Respondent's admission of the dangerous potential of heating raffinate containing Cumine Hydroperoxide constitutes a recognized hazard. See, *Detroit Steel Corp. v. OSHRC*, 579 F.2d 378 (6th Cir. 1978). In addition, the hesitation and concerns of ARCO's experts as well as the apparent agreement that the changed process needed further testing clearly put Respondent on notice that ARCO had reservations.[11] Indeed, ARCO specifically wanted to "run more experiments to determine the influence of 1) temperature . . . ." (R-17). Similarly, the concerns of its own Chief Operator went unanswered. Respondent's reliance on the HAZOP and its contention, in its post-hearing brief (Pp. 18-19) that ARCO found no hazard arising out of the process change is rejected completely. The facts do not support the argument nor is it a reasonable inference which could be drawn from the evidence of record. ARCO's last word on the subject was that it had concerns and that their studies were not yet completed.

As a general proposition, proceeding with the manufacture of production quantities of volatile chemicals under circumstances such as existed here (e.g., with the owner of the process urging further study) would appear to create a hazard which could result in serious injury or death. It is the likelihood of serious injury or death resulting from an injury rather

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impart inasmuch as it would have constituted strong confirmation of the results of the tritations. That any mention of it was omitted leaves doubt as to whether it was conducted. This is especially so because gas chromatography was the very analytical method which Bogaret at ARCO, and OSHA at Salt Lake employed.

[11] Respondent's attempt to imply that ARCO approved or authorized Organic Technologies' use of the changed process in production quantities is rejected. David Wiley's testimony to that effect (Tr. 667) is disingenuous. It is inconsistent with his other statement that he made his presentation to the HAZOP meeting then left, leaving to the others to do the rest of the work. Moreover, even if his statement is correct, he indicates that he believed that ARCO was in agreement that Organic Technologies would move from scale-up to production if the scale-up runs proceeded without incident and they attained the same results as the Dobbins experiments. Neither of those conditions were met. The scale-up results did not reach the levels supposedly reached by the Dobbins experiments and their own Chief Operator was rebuffed when he communicated his "concern" to management.

than the likelihood of an accident occurring which is determinative of this element of the § 5(a)(1) violation. As the above discussion indicates, the nature of Cumine Hydroperoxide and its known explosive potential, especially when subjected to heat and pressure, presented a hazard likely to result in serious injury or death. *Morrison-Knudsen Co./Yonkers Contracting Co., A Joint Venture,* 16 BNA OSHC 1105, 1122 (No. 88-572, 1993).

In order to eliminate or materially reduce the hazard Respondent could at least awaited going into production with Formalin as the reducing agent until the completion of the HAZOP study begun in March. Respondent had been producing R-Glycidol for two years without apparent mishap. Since it had produced the R-Glycidol, albeit in smaller quantities, using Sodium Metabisulfite as the reducing agent, continuing to use that process until all studies could be completed can reasonably be found to be a method by which the hazard of using the less-than-completely-tested process of using Formalin, would be eliminated or significantly reduced.

Item 1(a)(2) of the Citation is thus AFFIRMED.

The violation alleged in Citation Number 1, Item 1(a)(3)[12] is also AFFIRMED.

The Secretary takes the position that "the discharge locations and the orientation of the safety valves and vents of the reactor, and or its associated equipment were not directed

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[12] Item 1(a)(3) alleges a violation of § 5(a)(1);

> a. In that employees working in the vicinity of the 2,000 gallon reactor (N1001) during process operations (such as the production of R-Glycidol and the treatment of "Raffinate Waste") were exposed to increased risks of fires, explosions, hot materials, and toxic materials caused by the release of processed materials from the reactor or its associated equipment, and due to the employer not taking adequate measures to prevent hazardous release of corrosive, flammable, and/or toxic materials, in that:
>
> 3. The discharge locations and the orientation of the safety valves and vents of the reactor, and or its associated equipment (including the condenser, its safety valve, and the reactor's vent line) were known to be highly reactive, corrosive, flammable, and/or toxic.

to a catch tank, header pipe, flare system, fire pit, or other safe location." (Complaint, ¶ V(e)(3)).

Complainant relies greatly on the testimony of Compliance Officer Collins who testified about the hazards of discharges from valves and vents entering into employee work areas. On the basis of his having performed between 30 and 40 chemical manufacturing industry inspections and having conducted seminars on chemical process safety, the Secretary looks to Compliance Officer Collins as an expert. He opined that having two relief valves and one relief vent into the atmosphere at locations where employees worked was contrary to safe industry practice (Tr. 270). As Complainant notes, Respondent's expert agreed that having valves and vents discharge into employee work areas is considered unsafe by the Chemical Processing industry (Tr. 1618). There is thus no dispute that "the failure to direct the discharge locations of pressure relief valves and vents to safe locations is a recognized hazard in the chemical manufacturing industry" (Sec. Brief, p. 34).

The testimony of Collins as to his "expert opinion" as to the technical design and operation of discharge systems is accorded little weight. He has a bachelor's degree in Education and has done some graduate work towards a degree in Environmental Health and Safety (Tr. 250). His having conducted previous inspections of chemical manufacturing facilities is of some moment but without some assurance that he learned to do so properly or under a structured learning program, the number of such inspections cannot, by itself, be reasonably found to add significantly to his expertise. He might be more familiar with the general layout and operations of a chemical processing plant than a less experienced inspector but that additional experience does not amount to qualifications upon which acceptance of his opinion regarding complex organic peroxide reactions or the necessary and proper manner in which they are to be carried out.[13] Mr. Collins' experience of having previously inspected some kind or another of chemical facility is not, by itself, sufficient to

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[13] The applicable Federal Rule of Evidence, Rule 702, adopted by the Commission by virtue of its Rule 71, 29 C.F.R. § 2200.71 (1993), requires that an individual offering an opinion as to "scientific, technical. or other specialized knowledge" must be qualified as an "expert" in those matters "by knowledge, skill, experience, training or education."

show that he is an expert in the particular operations at issue in this case. There is little need, however, for the Secretary to have to rely on Collins' "expertise" in this matter.

On the other hand, Dr. Witter, Respondent's highly qualified expert in chemical process safety with extensive experience in the industry, conceded that discharge systems which allow or place discharged materials on to work areas are considered unacceptable by the chemical industry (Tr. 1618). It is not only Dr. Witter's education or expertise in chemical process safety which warrants affording his testimony on this matter significant weight. More importantly, through his lengthy service in the industry and his contacts throughout the industry he has had the opportunity to learn what the industry standards for safety are and how they are applied. Moreover, a hazard which would be recognized by a reasonably prudent person engaged in Respondent's industry is imputed to Respondent. That toxic or heated discharges from chemical processes should not be discharged into areas where employees are working seems so obvious a proposition that expertise is probably not needed at all to appreciate the dangerous potential of such discharges. The fact that the discharge system may have been technically designed to industry specifications as to its other aspects (heights above walkways, bends in proper places, sizes of valves, Etc.), is of little consequence where, as here, the discharge exhausts liquid from the system on to an area where employees are or are reasonably likely to work. Similarly, Respondent's expert's opinion that the discharge was unanticipated is of no avail as a defense to the alleged violation in that the likelihood of an occurrence is more a question going to penalty calculation once it is established that such an incident (the discharge of materials on to a work area) was reasonably predictable and, in fact, did occur.

There is virtually no question that on the evening of the explosion, the deceased employee was splattered with material discharged from a vent on to a process pad, a location at which employees would have occasion to work (Tr. 1447 -48). As with "employee exposure" cases arising under § 5(a)(2), the question is whether employees, within reasonable predictability, were within the zone of danger created by the violative condition. See, Brennan v. Gilles & Cotting, Inc., 504 F. 2d 1255, 1263 (4th Cir. 1974).

Finally, Compliance Officer Collins testified that Respondent could have directed the outflow from the valves and vents away from employee work stations (Tr. 265-270).

Respondent, according to Collins, might have to take other things into account in its re-design of the exhaust locations. He maintained that it could, however, accomplish the task. Respondent points to no testimony to the contrary. Thus, while Collins has not demonstrated an expertise in chemical engineering to the degree which would be necessary to offer an expert opinion on the feasibility of specific designs of exhaust and vent systems, he does have enough experience to testify as to what he has seen during inspections of other chemical manufacturers. His testimony is uncontradicted and I find that it constitutes a preponderance of the evidence on the question of the availability of a feasible means by which Respondent may eliminate or materially reduce the hazard of exhausting or venting materials within employee work areas. Complainant has thus established the third of the alleged violations of § 5(a)(1). Item 1(a)(3) of the citation is AFFIRMED.

The claimed insufficiency of Respondent's operating manuals and procedures forms the nucleus of the Secretary's fourth alleged violation of the general duty clause. The citation's broad language[14] was made more specific in the Secretary's complaint, ¶ V(e)(4), which specified that "there no written operating procedures that defined the steps that were to be taken to return the operating situation from abnormal to normal." The alleged violation was explained by Senior Compliance Officer - Industrial Hygienist Amanda Lange. She took the position that Respondent's manual of procedures for its employees was deficient because it lacked procedures for identifying and rectifying abnormal operating

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[14] This Item of the Citation reads:

> 4. Operating practices were inadequate. The employer did not provide formal written operating procedures to be used in normal and abnormal situations. the employer did not clearly define the boundaries between normal and abnormal operating situations. The employer did not clearly define the steps that were to be taken to return the operating situation from abnormal back to normal operation. The employer did not clearly define the operator's authority to exercise the steps to return the operation to norma, nor did the employer clearly define the situations under which the operator were to declare an emergency, inform management, and turn over control responsibility to the plant manager or to his/her designated emergency manage

conditions, did not contain shut-down procedures or operating parameters, and did not instruct operators in casualty procedures (Tr. 123-127). Complainant gives as examples of the faults of the manual; its failure to define "out of specification condition" while instructing employees to report the same; its failure to specify the conditions under which the reaction was to be quenched with cold water, indicating only that the need for the same might arise; its lack of instructions to employees regarding the actions to be taken in the event of a release or a leak (Brief, Pp. 38-39). Complainant acknowledges that a manual did exist and that it was in the process of being revised (Brief, Pp. 39-40). The Secretary identifies the "hazard" as follows;

> The hazard associated with the lack of comprehensive operating procedures is obvious; it there are no procedures which delineate how employees are to act and how they are to react in the event of a malfunction, employees have nothing to refer to when running a process or when a malfunction occurs.

(Brief, p. 40). Complainant further argues that "industry recognition of the need for adequate procedures is evinced by the operating procedures requirement in OSHA's process safety management standard. (Citation omitted.) Complainant's reliance on a standard promulgated after the inspection and date of alleged violations in this case is totally misplaced. The standard to which Complainant refers was a proposed standard at the time of the citation in this case. Since the Secretary, after notice and comment can, quite literally, completely re-write any proposed standard before it is issued in final form, reliance on a proposed standard as a statement of industry wide-recognition is not acceptable.

Respondent maintains that Complainant's position is not well founded in fact or law. It argues first that the Secretary's case is based on an out-dated version of the R-Glycidol Production Manual. The Compliance Officers apparently never examined the most recent revision of the R-Glycidol Production Manual (Tr. 234-235; 1199-1200). Respondent notes that its Chief Operator testified that the manual revisions, including instructions regarding the reduction process using Formalin, had been distributed to operators prior to using Formalin in production. Respondent's expert reviewed the major provisions of the manual and opined that it was consistent with industry standards (Tr. 1581). Most of the measures identified as necessary by Complainant were located in the new manual by Witter or

Virostko. The Secretary sought to rely in the expertise of compliance officers who had no training or experience in chemical process management (Tr. 149-151). Some were a matter of common sense. The opinions of Witter as to training methods, manuals etc., are accorded significantly greater weight than those of the Compliance Officers, based on their relative degree of experience.

Finally, the Secretary's proposed method of abatement, the use of a manual several volumes in length (Tr. 237-238) appears to be more unrealistic than any fault found in the present volume. There is no demonstration that the contents, organization or omissions from Respondent's production manual constituted a recognized hazard. Accordingly, Item 1(a)(4) is VACATED.

The fifth and final alleged violation of § 5(a)(1) was described in the complaint, ¶ V(e)(5), as "employee operators were not adequately trained in their duties and responsibilities." This alleged violation was initially set forth in the citation as:

> 5. The employer did not establish a formal training program to instruct the operators in their duties and responsibilities regarding the reactor operating procedure. The employer did not test the operators to ensure their full understanding of their responsibilities. Having not given the operators specific operating instructions and no formal training, the employer did not closely monitor and control the actions of the operators, using managers who had been formally educated in chemical engineering and in the operation of chemical reactors.

At the hearing Complainant's evidence regarding the training of Respondent's employees centered around the lack of "formal" training, meaning classroom hours, (*e.g.,* Tr. 1220) and argues, in essence, that no amount of on-the-job training can adequately prepare employees for some jobs (Sec. Brief, p. 43). Mr. Virostko did most of the training of employees in regard to the R-Glycidol process. His credentials as an expert in training are impressive. He was a reliable and probative witness whose testimony is accorded significant weight. He indicated that Wears, the process operator on the night of the explosion, had received training in detail regarding the R-Glycidol operation (Tr.1188-1193). The operators, as part of their training, were tested and given rankings on their progress (Tr. 1189-1191). Some other supervisory personnel appeared to give operators less formal

training (Tr. 1194-1195). He conceded that the operators did not receive class room training, undergo written testing or engage in "drills" (Tr. 1270-1271). The Secretary points to the lack of training in the R-Glycidol process received by Darling who was working with Wears on the night of the explosion. The record shows that Darling was new to the R-Glycidol process and was more of a helper to Wears than an operator of the process. As discussed above, it is both a matter of common sense and a matter of Witter's testimony that the chemical manufacturing industry recognizes the importance of training. Lack of appropriate training is a hazard recognized both by reasonably prudent employers and the chemical industry. The Secretary seems to argue that because an employee made an error on the night of the explosion he must have received inadequate training (Sec. Brief, p.45). The Secretary's argument is rejected. The Secretary has forged no link between the lack of classroom lectures and written examinations ("formal" training) and the recognized hazard of having employees inadequately trained. He points to nothing inherent in the manner in which Respondent's employees were trained which would lead to a recognized hazard. The mere fact that the type of training Virostko received in the navy as a nuclear technician, which was indeed more formal, extensive and highly organized, than that Respondent provided to its operators, does not mean that Respondent's training was inadequate. Item 1(a)(5) of the citation is VACATED.

Citation 1, Item 5[15]
29 C.F.R. § 1910.132(q)(3)(i)

Alleged as Item 5 of the citation alleging serious violations of the Act, was the claim by the Secretary that emergency responders from Organic Technologies on the night of the

[15] Items 5 and 6 of the citation allege violations of § 5(a)(2) of the Act which, basically, require an employer to comply with all safety and health standards which apply to its business.

explosion, entered the facility without the knowledge or consent of the on-scene commander.[16] For the following reasons, Item 5 of the citation is AFFIRMED.[17]

Complainant notes that the Newark Fire Department, which was directing the emergency response operation following the explosion, had established a hot zone, entry into which was under the control the incident commander, Assistant Fire Chief Anita Stickle.

Under the cited standard's scope provision, 1910.120(a)(5), the requirements of the rest of the standard are invoked at any emergency operation at a scene where there are "releases or substantial threats of releases of hazardous substances." The responding emergency service, the Newark Fire Department, knowing only that the explosion had occurred at a plant manufacturing chemicals, operated under the assumption that they were involved with an emergency operation. Complainant correctly maintains that it was reasonable for the Newark Fire Department to conclude that there was a substantial threat of a release of hazardous chemicals. Just as important is the fact that the determination was made to commence an emergency operation. It was in effect at the time Respondent's officials arrived at the scene. Thus, even if the Newark Fire Department was in error in declaring an emergency operation in progress, officials of Respondent were under the control of the incident commander until that commander ceased emergency operations. In the face on ongoing emergency operation, all of Respondent's personnel at the scene were

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[16] The cited standard provides, in pertinent part:

> All emergency responders and their communications shall be coordinated and controlled through the individual in charge of the ICS assisted by the senior official present for each employer.

[17] To prove a violation of a standard, the Secretary must demonstrate by a preponderance of the evidence (1) that the cited standard applies, (2) non-compliance with the terms of the standard, (3) employee exposure or access to the hazard created by the non-compliance, and (4) the employer knew or, with the exercise of reasonable diligence, could have known of the condition. *Astra Pharmaceutical Products, Inc.*, 9 BNA OSHC 2126, 2129 (No. 78-6247, 1981); *Dun-Par Engineered Form Co.*, 12 BNA OSHC 1949 (No. 79-2553), *rev'd & remanded on other grounds*, 843 F.2d 1135 (8th Cir. 1988), *decision on remand* 13 BNA OSHC 2147 (1989).

required to comply with sub-paragraph q of 29 C.F.R. § 1910.120. Respondent's argument (Brief, p.49) that the cited standard applies only to the incident commander is rejected. Under Respondent's reading of the standard only an incident commander can be cited for failure to coordinate activities at the scene while individual employers who have people at the scene can not be cited for their failure to coordinate their activities with the indecent commander. Such a one way street is the antithesis of the clear meaning of the standard. All employers of personnel at an emergency response site must be under the control of the one individual who has access to all information at all times.

Respondent posits another "applicability" argument. Citing 1910.120(q)(1), it claims that since Organic Technologies had an emergency response plan in accordance with 1910.38(a), it was exempt under 1910.120(q)(1). Respondent, however, failed to carry the burden of proving each element of the exemption. Where as here, a Respondent claims the benefit of an exemption which is part of a cited standard, it bears the burden of proving by a preponderance of the evidence all elements of the exemption. Even if the provision were applicable to Respondent, it failed to show that it in fact had a written plan (no less one which met all of the detailed requirements of 1910.38(a)) or that it filed a copy of such a plan with the Newark Fire Department. Accordingly, I find that the Secretary established that the cited standards are applicable.

There is virtually no question that officials of Organic Technologies entered the premises after the Newark Fire Department established it as an emergency response operation. They did so despite the specific prohibition of the Newark Fire Assistant Chief whom they knew to be the incident commander (Tr. 361-362, 381-382). Complainant alleges that in disregarding the specific prohibition of the incident commander, Respondent "failed to coordinate its response efforts" in violation of the cited standard.

Organic Technologies concedes that David Wiley and Mark Morehart entered an area surrounding the facility. They claim, however, that the gate through which they entered was not blocked or marked with the yellow tape used to designate the "hot zone." Both claim that neither the Newark Assistant Fire Chief nor any other fireman "told them to stay out of the gate area." Respondent maintains that Ms. Stickle, the incident commander, did not "secure the scene" as she was required to, failed to give Respondent's officials clear

directions as to areas which were restricted and failed to ensure that employees did not enter those areas. Respondent's arguments are rejected.

The testimony of the incident commander leaves no doubt that she instructed David Wiley and at least two other men whom she believed to be officials of Respondent, not to enter the building itself or the hot zone (Tr. 361-362; 381). Despite the emergency conditions at the site Ms. Stickle's memory was quite clear and specific. She was a highly credible witness and recalled matters with detail and clarity. She testified in an open and non-evasive manner and has no interest in the outcome of the case. Her version of events is credited over that of David Wiley or Mark Morehart. Although David Wiley maintains that he saw no yellow tape "up in that area" (Tr. 1134) he conceded that he was escorted away from the property at least once and that he was told by the incident commander to stay out of the area (Tr. 1137). Even if Wiley's testimony that yellow tape was "not up" is accurate, he had reason to know he was entering an area into which the incident commander did not want him to go. Moreover, the Assistant Chief stated that David Wiley had been inside the restricted area several times, at least more than once and that she had to have him escorted out. (Tr. 381, 388-389). I find that David Wiley entered into an area of emergency operations which he knew, or reasonably should have known, the incident commander did not want him to enter. Such an activity is, I conclude, a failure to coordinate efforts under the cited standard. Item 5 of Citation 1 is AFFIRMED.

Citation 1, Item 6
29 C.F.R. § 1910.132(q)(3)(iv)[18]

Item 6 alleged a serious violation in that emergency responders from Organic Technologies entered the facility on the night of the explosion without respiratory protection.

There is no question that when Wiley entered the area he was using no protective equipment. Organic Technologies argues that when Wiley entered the building area again

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[18] The cited standard requires that employees engaged in emergency response operations who are exposed to potential inhalation hazards wear positive pressure self-contained breathing apparatus.

in the early morning hours there had been an "all clear," that firemen in the building at that time were not wearing protective equipment and that he was accompanied a representative of the State Fire Marshall's office. He also argued that at that time, no hazardous materials lingered in the air. Finally, Respondent claims that the incident commander never informed Respondent's officials that respiratory equipment was required.

Respondent makes no mention of the first entry into the area, through the gate, prior to the claimed "all clear" when he was accompanied only by Morehart and when there was a possibility of hazardous materials in the air. Finally, there is no need for an incident commander to specifically inform persons who have already been told to stay out of an area that those in the area should wear protective breathing apparatus. In addition, Assistant Chief Stickle testified that no representative of the state fire marshall was on the premises the night of the explosion and that at no point during the night did she authorize personnel of Organic Technologies to enter the premises. I credit the testimony of Assistant Chief Stickle over that of David Wiley.[19] Accordingly, Item 6 of Citation 1 is AFFIRMED.

Neither party presented any argument as to the appropriateness of the amount of penalties proposed by the Secretary. Although the amount of penalties to be assessed upon the finding of violations of the Act is within the discretion of the judge or Commission, in this instance the amounts proposed by the Secretary are assessed.

FINDINGS OF FACT

All findings of fact necessary for a determination of all relevant issues have been made above. Fed. R. Civ. P. 52(a). All proposed findings of fact and conclusions of law inconsistent with this decision are hereby denied.

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[19] Among the facets considered in assessing credibility were the facts that Mr. Wiley's testimony was contradicted several times. It was contradicted by more than one other witness. He has an interest in the outcome of the proceedings. At times he seemed to avoid direct answers in favor of equivocation.

CONCLUSIONS OF LAW

1. Respondent was, at all times pertinent hereto, an employer within the meaning of § 3(5) of the Occupational Safety and Health Act of 1970, 29 U. S. C. § § 651 - 678 (1970).

2. The Occupational Safety and Health Review Commission has jurisdiction over the parties and the subject matter.

3. Respondent violated § 5(a)(1) of the Act by making process changes (reduction of raffinate waste with formaldehyde) on a production scale without making adequate preparation and evaluation of the change.

4. Respondent violated § 5(a)(1) of the Act by positioning discharge locations of vents or valves in such a manner so that materials were vented or exhausted on to employee work areas.

5. Respondent did not, as alleged, violate § 5(a)(1) of the Act by failing to provide adequate written operations procedures or manuals.

6. Respondent did not, as alleged, violate § 5(a)(1) of the Act by failing to adequately train employees in their duties and responsibilities.

7. Respondent violated § 5(a)(2) of the Act by failing to comply with the standards at 29 C.F.R. § § 1910.120(q)(3)(i) and 1910.120(q)(3)(iv) as alleged. The violations are serious within the meaning of the Act.

ORDER

1. Citation Number 1, Item 1(a)(1) is VACATED.

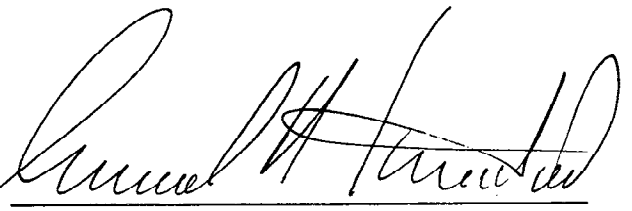
2. Citation Number 1, Items 1(a)(2) and 1(a)(3) are AFFIRMED. Penalties of $1,400 are assessed for each item.

3. Citation Number 1, Items 5 and 6 are AFFIRMED. Penalties of $3,000 are assessed for each item.

4. Pursuant to the statements of the parties:

   a. Items 1(a)(1), 7, 8, 9, 11, 21(b), 23, 24, 25, 29, 30 and 31 of Citation Number 1, and Item 3 of Citation Number 3 are VACATED.

   b. Citation Number 1, Items 3, 4, 10, 12, 13, 21(a), 26, 27 and 28 and Citation Number 3, Items 1 and 2 are AFFIRMED. A penalty of $12,000 is assessed for the above items.



MICHAEL H. SCHOENFELD
Judge, OSHRC

Dated: MAY 20, 1994
Washington, D.C.