BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC

In re:	)	
	)	
Carbon Injection Systems LLC,	)	
Scott Forster,	)	**RCRA Appeal No. 15-01**
and Eric Lofquist,	)	
	)	
Docket No. RCRA-05-2011-0009	)	
	)	

OPENING BRIEF

OF THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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I. INTRODUCTION

The United States Environmental Protection Agency ("EPA") submits this brief ("Brief") pursuant to the Environmental Appeals Board's July 14, 2015, Order identifying the issues to be addressed on *sua sponte* review and setting the briefing schedule, and in accordance with EPA's Consolidated Rules of Practice Governing the Administrative Assessment of Civil Penalties and the Revocation or Suspension of Permits ("Consolidated Rules"), 40 C.F.R. Part 22.

The Complaint in this matter was filed by EPA on May 13, 2011, pursuant to Section 3008(a) of the Solid Waste Disposal Act, as amended, also known as the Resource Conservation and Recovery Act, as amended by the Hazardous and Solid Waste Amendments of 1984 (collectively referred to as "RCRA"), 42 U.S.C. § 6928(a). The Respondents were Carbon Injection Systems LLC, Scott Forster, and Eric Lofquist (collectively "Respondents"). The Complaint alleged ten counts of violations of the authorized state RCRA program found in the Ohio Administrative Code ("OAC").[1] EPA requested the assessment of a civil penalty in the

[1] RCRA authorizes EPA to regulate hazardous wastes from cradle to grave, in accordance with the safeguards and waste management procedures of Subtitle C, 42 U.S.C. §§ 6921-6939. *See Chicago v. Envtl. Defense Fund*, 511 U.S. 328, 331 (1994). The standards to regulate hazardous wastes are found at 40 C.F.R. Parts 260 through 279, and contain requirements for the generation, storage, treatment, transportation, and disposal of hazardous wastes. Section 3005(a) of RCRA, 42 U.S.C. § 6925(a), and its implementing regulations at 40 C.F.R. Part 270, require each person owning or operating a facility for the treatment, storage, or disposal of hazardous waste to obtain a RCRA permit for its operation.

RCRA allows a state to apply for EPA authorization of the state's hazardous waste program, and for revisions to the program. 42 U.S.C. § 6926(b). Once authorized the state regulations become the operative requirements and EPA may enforce the state regulations as requirements of RCRA pursuant to Section 3008(a), 42 U.S.C. § 6928(a). The Administrator of EPA granted the State of Ohio final authorization to administer a state hazardous waste program in lieu of the federal government's base RCRA program effective June 30, 1989. 54 Fed. Reg. 27,170 (June 28, 1989). EPA has granted authorization for several changes to the Ohio RCRA program since 1989.

aggregate amount of $1,915,148 (the Complaint was later amended to lower the requested penalty to $1,578,173) and the issuance of a compliance order against Respondents. Respondents filed an Answer to the Complaint on July 15, 2011. With leave, EPA filed a First Amended Complaint and Compliance Order ("First Amended Complaint") on April 12, 2012, and a Second Amended Complaint and Compliance Order ("Second Amended Complaint") on June 8, 2012. Respondents filed an Answer to U.S. EPA's First Amended Complaint and Compliance Order ("First Amended Answer") on April 20, 2012, and because Respondents did not file an answer to the Second Amended Complaint, the First Amended Answer was deemed by the Presiding Officer to respond to it.

The hearing in this matter was held in Cleveland, Ohio, starting on June 18, 2012, and continued through June 29, 2012. On July 16, 2012, the hearing resumed in Augusta, Georgia.

The record establishes that Respondents operated the Facility located at Gate #4 Blast Furnace Main Avenue, Warren Township, Ohio (the "CIS Facility") from May 2005 to March 2010. Respondents installed a Fuel Oil Storage Facility at property located adjacent to the blast furnace at the RG Steel LLC facility (formerly known as Severstal Warren, Inc., Warren Consolidated Industries, Inc., and WCI Steel, Inc.) in Warren, Ohio (hereinafter "WCI" or "WCI Steel"). The CIS Facility received material from third party generators, unloaded it into one of ten vertical above-ground storage tanks, where it mixed with any other material in that particular storage tank, before ultimately being transferred to a day tank. Material was then sent from the CIS day tank to the blast furnace at WCI Steel. This operation started in May 2005. The WCI Steel blast furnace was idled in October 2008, and materials were stored in the CIS tanks at that time. WCI Steel blast furnace operations resumed in March 2010, but both WCI Steel blast furnace and CIS Facility operations have since permanently ceased.

Activities conducted by Respondents at the CIS Facility included: blending used oil streams; blending used oil (both on-specification used oil and off-specification) with virgin fuel products; blending used oil to meet fuel specifications; and marketing on-specification used oil fuel to a consumer. Respondents stored K022, D001, D035, F003, and F005[2] (discarded materials) in 20,000 gallon tanks before those materials were transferred from the CIS Facility for treatment, storage, disposal, burning or incineration elsewhere. These materials were unloaded into storage tanks for sequencing into the Respondents' day tank. The Respondents' day tank fed the blast furnace at WCI Steel, where energy was recovered from the injected materials.

EPA alleged that Respondents Carbon Injection System LLC ("CIS"), Scott Forster ("Forster"), and Eric Lofquist ("Lofquist") were, as described in the Second Amended Complaint, liable for a variety of RCRA violations which occurred when the Respondents managed hazardous waste at the CIS facility. EPA alleged that the facts supported the issuance of a Compliance Order and the assessment of a $1,579,173 penalty, pursuant to Section 3008 of RCRA, 42 U.S.C. § 6928, and 40 C.F.R. § 22.37(b).

In the Second Amended Complaint, EPA alleged the following violations by Respondents:

1. Failure to have a permit to store and treat hazardous waste, in violation of Section 3005 of RCRA, 42 U.S.C. § 6925(a) and the requirements of Ohio Administrative Code ("OAC") §§ 3745-50-40 to 3745-50-66 [40 C.F.R. §§ 270.1(c) and 270.10(a) and (d), and 270.13] (Count 1 of the Complaint);

2. Failure to hold a public meeting, in violation of OAC §§ 3745-50-39(A)(2), 3745-50-40(A)(2)(a) [40 C.F.R. § 124.3 1(b)] (Count 2 of the Complaint);

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[2] There are two types of hazardous wastes under RCRA: characteristic and listed. *See* 40 C.F.R. Part 261 Subparts C and D. The materials at issue in this matter are listed.

3. Failure to develop and follow a sufficient written waste analysis plan, in violation of OAC § 3745-54-13(B) and (C) [40 C.F.R. § 264.13(b) and (c)] (Count 3 of the Complaint);

4. Failure to train facility personnel with a program of classroom instruction or on-the-job training, to teach them to perform their duties in a way that ensured the facility's compliance with the requirements of the standards for owners and operators of hazardous waste, treatment, storage and disposal facilities, in violation of OAC § 3745-54-16(A)(1) [40 C.F.R. § 264.16(a)(1)], and failing to maintain documents and records related to this training, in violation of OAC § 3745-54-16(D) [40 C.F.R. § 264.16(d)] (Count 4 of the Complaint);

5. Failure to attempt to make: (a) arrangements to familiarize police, fire departments, and emergency response teams with the layout of the facility, properties of hazardous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to and roads inside the facility, and possible evacuation routes; (b) where more than one police and fire department may respond to an emergency, agreements designating primary emergency authority to a specific police and a specific fire department and agreements with any others to provide support to the primary emergency authority; (c) arrangements with Ohio Environmental Protection Agency ("OEPA") emergency response teams, emergency response contractors, and equipment suppliers; and (d) arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and types of injuries or illnesses which could result from fires, explosions, or releases at the facility, in violation of OAC § 3745-54-37(A) [40 C.F.R. § 264.37(a)] (Count 5 of the Complaint);

6. Failure to require a hazardous waste manifest for:
    - hazardous waste (K022) accepted on November 21, 2005;
    - hazardous waste (D001) accepted on forty (40) occasions between August 9, 2006 and February 27, 2009; and
    - hazardous waste (D001, D035, F003 and F005) accepted on one hundred forty nine (149) occasions between November 16, 2006 and February 10, 2009

   in violation of OAC § 3745-54-76 [40 C.F.R. § 264.76], and failing to prepare and submit an unmanifested waste report in the form of a letter to the director of the OEPA within fifteen days after receiving the waste (Count 6 of the Complaint);

7. Failure to have a written closure plan that identifies the steps necessary to perform partial or final closure of the facility, in violation of OAC §§ 3745-55-10 through 3745-55-20 [40 C.F.R. §§ 264.110-120] (Count 7 of the Complaint);

8. Failure to have and maintain a detailed written estimate, in current dollars, of the cost of closing hazardous waste management units in violation of OAC 3745-55-42 [40 C.F.R. § 264.142], and failing to comply with applicable financial assurance requirements, in violation of OAC § 3745-55-43 [40 C.F.R. § 264.143] (Count 8 of the Complaint);

9. Failure to obtain and keep on file at the facility a written hazardous waste tank assessment, in violation of OAC § 3745-55-92 [40 C.F.R. § 264.192] (Count 9 of the Complaint); and

10. Failure to determine and provide land disposal notification and certification pursuant to the land disposal requirements of OAC § 3745-270-07 [40 C.F.R. § 268.7] (Count 10 of the Complaint).

Additionally, EPA requested issuance of an Order requiring Respondents to comply with all closure, post-closure, and financial assurance requirements of RCRA as necessary to protect human health and the environment.

On March 17, 2015, the Presiding Officer, Chief Administrative Law Judge Susan L. Biro, issued her initial decision in this matter. In the Matter of Carbon Injection Systems, LLC, et al., Docket No. RCRA-05-2011-0009 (March 17, 2015) ("Initial Decision"). In her Initial Decision, the Presiding Officer determined that the Respondents had not violated RCRA, because the material treated and stored by Respondents was not a solid waste, because "in order for a material to be considered a 'solid waste' under RCRA or a 'waste' under the Ohio Administrative Code by virtue of having been recycled through 'burning for energy recovery,' the combustion of the material shall result in the recovery of substantial and useful heat energy." Initial Decision at 47-48. Neither EPA nor Respondents appealed the Initial Decision to the Environmental Appeals Board ("EAB").

On May 18, 2015, the EAB exercised *sua sponte* review, pursuant to 40 C.F.R. §§ 22.27(c)(4), 22.30(b). On July 14, 2015, in its Order establishing the briefing schedule, the EAB asked the parties to answer specific questions. The EAB's questions, and EPA's responses to those questions, after consultation by Region 5 with EPA's Office of Enforcement and Compliance Assurance, Office of Solid Waste and Emergency Response, and Office of General Counsel, are below.

II. THE EAB'S QUESTIONS AND EPA'S RESPONSES TO THOSE QUESTIONS

A. Does the phrase "burned for energy recovery" include materials burned to recover chemical energy?

Yes. The phrase "burned for energy recovery" includes materials burned to recover chemical energy. This phrase is part of the definition of "waste" (under the Ohio regulations) and "solid waste" (under federal regulations). To be regulated as "hazardous waste" under OAC § 3745-51-0340 [40 C.F.R. § 261.3] a secondary material must first be found to be a "waste" or "solid waste." A secondary material is a waste or solid waste if it is "discarded" by being "recycled" by being "burned for energy recovery." OAC § 3745-51-02 [40 C.F.R. § 261.2].[3]

As an initial matter, the terms "burned" and "recover" are not issue in this matter. As noted by the Presiding Officer, "[g]iven the parties' concurrence on this issue, the undersigned finds that a reliance on the plain meaning of the terms "burn" and "recover" is appropriate to define those terms as they are used in the regulations at OAC § 3745-51-02(C), (E)(2)." Initial Decision at 41.[4] Accordingly, the issue raised by the EAB is the nature of the "energy" that is being recovered by burning a carbon-containing material injected through the tuyeres into an iron-making blast furnace raceway and whether the definition of solid waste is limited to materials burned to recover "heat energy" or if the definition includes material burned to recover "chemical energy."

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[3] On January 13, 2015, EPA published final changes to the definition of solid waste. 80 Fed. Reg. 1,694. The changes are not relevant to the issues in this matter.

[4] Throughout the Initial Decision, the Presiding Officer cites to the OAC, because EPA is enforcing the authorized Ohio RCRA program (*see* footnote 1, supra). The federal RCRA definition of a "solid waste" appears at 40 C.F.R. § 261.2 and, like the definition of "waste" in the OAC, includes the phrase "burned for energy recovery."

The Presiding Officer found that the injectants provided by the Respondents to WCI were excluded from the definition of solid waste by virtue of the recycling exemption because they were not "burned for energy recovery." To reach this conclusion the Presiding Officer ignored the plain meaning of "burning for energy recovery" as published in the regulations. Instead, the Presiding Officer concluded that it means burning for the purpose of obtaining substantial, useful heat energy. But the regulatory language does not include this limitation on "energy recovery." In fact, the regulation makes no distinction between heat and chemical energy, and Agency Federal Register preambles encompass both chemical energy and heat energy concepts as part of the term "energy recovery." Respondents' experts agreed that these materials were intentionally used for the chemical conversion of iron ore to iron.

The EAB has previously provided a roadmap for regulatory construction that is applicable to this case. In 2007, the EAB decided a case that turned on the meaning of the term "spent material" as defined in 40 C.F.R. § 262.1 and used in 40 C.F.R. § 262.2. *In re Howmet Corporation,* 13 E.A.D. 272 (EAB 2007) , *aff'd, Howmet Corp. v. EPA*, 656 F. Supp.2d 167 (D.D.C. 2009), *aff'd, Howmet Corp. v. EPA*, 614 F.3d 544 (D.C. Cir. 2010).[5] Although *Howmet* involved the interpretation of the meaning of the term "spent material," and this case turns on the meaning of the term "burned for energy recovery," the EAB's framework for regulatory analysis applies here.

The EAB's instruction for regulatory analyses in cases such as this requires, first, a review of RCRA's general approach to recyclable materials and the burning of secondary

[5] *Howmet* addresses two major issues: (1) whether the respondent had liability because the material was "spent" under RCRA and (2) if the material was "spent", whether respondent had fair notice that EPA was interpreting the relevant regulations so as to regulate the respondent's material in particular. *Howmet,* 13 E.A.D. at 281-282.

materials for energy recovery and, second, analysis of whether the secondary materials at issue are burned for energy recovery. In looking at the second factor, the EAB's framework requires analysis of: (a) the plain language of the regulatory provision "burning for energy recovery;" (b) the objectives of the statute; (c) whether EPA's interpretation of the term is consistent with the regulations as a whole; and (d) any guidance provided by the rule-making history, such as preamble statements that may include EPA's prior interpretations of the provision in question. Greater deference is given to positions that are supported by Agency statements and opinions that have been consistent over time. *Howmet*, 13 E.A.D. at 298.

As set out more fully below, the phrase "burned for energy recovery" is not limited to any particular type of energy and EPA has never interpreted it as exclusively encompassing only heat energy. The record in this matter supports the conclusion that injectants of the type at issue in this matter burned in the raceway of an iron making blast furnace provide both "heat energy" (blast furnace top gas that is not used to reduce the iron is used as a fuel in the stoves outside the raceway that heat the hot air blast) and "chemical energy" (by providing the carbon monoxide and hydrogen that foster the necessary furnace reactions that reduce iron oxide to iron). This is consistent with the Agency's long-standing interpretation regarding similar materials burned in these types of units. EPA determined that secondary material injectants are burned in blast furnaces for both chemical and heat energy recovery (as described in Federal Register preambles to proposed and final regulations) are regulatory solid wastes. Preambles, from 1985, 1987 and 1991, demonstrate that energy includes the chemical conversions caused by the reductants created from the "burning" or oxidation of the secondary material. These constitute exactly the type of contemporaneous interpretations the Board has relied upon in previous regulatory interpretation inquiries. *Howmet*, 13 E.A.D. at 296-298; *In re Morton L. Friedman and Schmitt*

Construction Company, 11 E.A.D. 302, at 327-331 (EAB 2004) (the Board looked to preamble language to provide instruction as to the scope of term the "facility," holding that preamble language "is evidence of an agency's contemporaneous of its proposed rules" and "therefore provides guidance in evaluating whether the agency's interpretation of its regulation is consistent with the structure and language of the rule."), *aff'd, Friedman v. EPA*, 2005 U.S. Dist. LEXIS 49598 (E.D.Ca. Feb. 25 2005), *aff'd, Friedman v. EPA*, 2007 U.S. App. LEXIS 3616 (9th Cir. Feb. 15, 2007); *In re Andrew B. Chase*, slip op. at 15, n.15 (EAB Aug. 1, 2014), 16 E.A.D. ___ (EAB relied on EPA internal memorandum interpreting the term "annual"). This is not a "litigation position advanced by enforcement counsel" that is "not entitled to full deference" (Initial Decision at 40); it is a longstanding Agency position that these types of materials are burned in blast furnaces for energy recovery.

1. The Plain Language of the Phrase "Burning for Energy Recovery" is Not Limited to One Type of Energy

The Presiding Officer erred in concluding that the plain meaning of the term "energy" at issue here was limited to just heat energy. The plain meaning of the regulatory language, the common usage of the term, and its application in the context of the facility at issue in this case all compel the opposite conclusion. First, there is no suggestion in the language of the regulation that the term is limited to a single type of energy. The Presiding Officer acknowledged as much. Initial Decision at 43. There is simply no basis to conclude that the language of the phrase "burning for energy recovery" itself compels the Presiding Officer's conclusion. The plain meaning of "energy" can quite naturally include several types of energy. "When a word is not defined by statute, we normally construe it in accord with its ordinary or natural meaning." *Smith v. United States*, 508 U.S. 223, 228 (1993). While the Court in *Smith* acknowledged that "language cannot be interpreted apart from context," it ultimately held that

the phrase "uses ... a firearm" is broad enough in ordinary usage to cover use of a firearm as an item of barter or commerce.

> It is one thing to say that the ordinary meaning of "uses a firearm" includes using a firearm as a weapon, since that is the intended purpose of a firearm and the example of "use" that most immediately comes to mind. But it is quite another to conclude that, as a result, the phrase also excludes any other use. Certainly that conclusion does not follow from the phrase "uses ... a firearm" itself.

Id. at 230. In the Initial Decision, the Presiding Officer contradicted this logic by finding that because "energy" can be commonly thought of as "heat energy" this necessarily excludes all other types of energy included in the term's plain meaning.[6]

Second, the common usage of the term "energy" arises in many contexts that have nothing to do with thermal energy (e.g., wind energy, the energy of a force created in a car accident, energy levels of athletes) undermining the conclusion that the plain meaning of the term is limited to heat energy. Furthermore, the Board has previously counseled that assistance in gleaning the plain or common meaning of terms can be gained by consulting general reference materials. *Howmet*, 13 E.A.D. at 295. A review of such materials indicates that common definitions of "energy" are not limited to the heat or thermal variety. For example, the New Oxford American Dictionary includes the definition of energy as the "power derived from the utilization of physical or chemical resources," a concept that matches the expert testimony that the waste material here was intentionally burned to utilize the chemical reactions that resulted. New Oxford American Dictionary 574 (3d ed. 2010). And both the University of Chicago Science and Technology Encyclopedia and the Oxford Concise Science Dictionary include in the

[6] By analogy, there is no basis to conclude that a regulation that requires registration of imported fruit applies only to bananas even if they are the most commonly consumed and imported fruit. The "plain meaning" of the term "fruit" can include more than just one type.

definition of "energy" a listing of numerous types of energy. University of Chicago Science and Technology Encyclopedia 182 (1999) ("The many forms of energy include electrical, nuclear, thermal, light and chemical"); Oxford Concise Science Dictionary 241(1990) (potential energy, one of the two forms of energy (kinetic being the other) "includes gravitational energy, electrical energy, nuclear energy, and chemical energy").[7]

Third, even in the more specific context of industrial furnace processes and the context of the phrase "burning for energy recovery" in the definition of solid waste, 40 C.F.R. § 261.2(c)(2), there is no basis to conclude that the only type of energy encompassed in the plain meaning is heat energy. Burning is frequently performed to produce, for example, kinetic, electrical, or chemical energy and may often be done in a manner that intentionally limits the production of heat energy (such as in steam generation where excess heat is deemed waste heat). As the Presiding Officer found, experts for both parties testified that injectants are intentionally added to the combustion unit to impart chemical energy to the process, something that is routinely done in these types of combustion processes. Initial Decision at 42. Therefore, one cannot say, even in the technical context of this process, that chemical energy recovery is not within the plain meaning of the phrase used in the regulatory definition of solid waste.

To be clear, Complainant is not arguing that the regulatory phrase "burning for energy recovery" does not include heat energy, but rather that the term can and does encompass more than one type of energy recovery. *Smith,* 508 U.S. at 230. Therefore, it is not surprising that in

[7] The Oxford Concise Science Dictionary defines "fuel" as "a substance that is oxidized or otherwise changed in a furnace . . . to release useful heat *or energy*" (emphasis added). This distinction between heat and energy is worth noting, especially in light of Congress' mandate that EPA regulate the burning of hazardous waste as fuel in RCRA § 3004(q).

many instances, heat energy is the type of energy that might be recovered.[8] But EPA has never stated that heat energy is the sole type of energy covered by the definition of solid waste and has, in fact, specifically found that the recovery of *chemical* energy can be the basis for determining that the burning of this type of material will result in a regulatory solid waste. See the discussion below in Section A.3.

2. Objectives of the Statute and Regulations as a Whole

As explained in EPA's Post Hearing Reply Brief at pages 5-31, both RCRA's general approach to recycled materials, and EPA's approach to materials "burned for energy recovery," indicate EPA's intent to regulate the materials sold by CIS to WCI for use as injectants in WCI's iron making blast furnace. Indeed, Congress made it clear when it enacted the Hazardous and Solid Waste Amendments of 1984, Pub. L. No. 98-9 ("HSWA"), that its concerns with the management of hazardous wastes applied with equal force to recyclable materials. The following passage from HSWA's legislative history is instructive in this regard:

> This section of the Bill amends Section 3001 of RCRA to require the Administrator to issue regulations regarding use, reuse, recycling, and reclamation of hazardous wastes. * * * The Committee affirms that RCRA already provides regulatory authority over these activities (which authority the Agency has exercised to a limited degree) and in this provision is amending to clarify that materials being used, reused, recycled, or reclaimed can indeed be solid and hazardous wastes and that these various recycling activities may constitute hazardous waste treatment, storage, or disposal. * * * *The committee is particularly concerned with possible harm caused by hazardous waste use and reuse involving direct introduction of hazardous wastes to the air* or direct application of hazardous wastes to the land.

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[8] The Presiding Officer put significant weight on her observations that particular EPA documents talked solely of heat energy in the context of "burning for energy recovery." Initial Decision at 42-47. But these references are not surprising given that heat energy is often the type of energy recovered when secondary materials are burned. This prevalence of references should not be the basis for the conclusion that heat energy is the only type covered by the regulations. No doubt in the context of the *Smith* case cited above one would find the majority of references to the phrase 'use of a firearm' relates to its discharge rather than sale in commerce.

H.R. Rep. No. 98-198(I), at 46 (1984), *reprinted in* 1984 U.S.C.C.A.N. 5576, 5605 (emphasis added). This concern is reflected in RCRA, with Congress stating that "inadequate and environmentally unsound practices for the disposal or use of solid waste have created greater amounts of air and water pollution and other problems for the environment and health." 42 U.S.C. § 6901(b)(3). The tension between regulation of recyclables and legitimate, beneficial recycling and reuse has generally been resolved by EPA through a series of categorical inclusions and exclusions, based in part by an assessment of whether a given material is inherently more waste-like or product-like, and in part by consideration of the environmental risks associated with the reuse scenario. In light of Congress's concern over improper management of materials that are recycled, EPA proposed to address materials that are recycled by being burned for energy recovery in 1983. 48 Fed. Reg. 14,472. In 1984, Congress enacted Section 3004(q) of RCRA, 42 U.S.C. § 6924(q), requiring that EPA examine the risks posed by combustion activities and consider what controls should be placed on the burning of hazardous waste for energy recovery. Subsequent rulemakings culminated in the boiler and industrial furnace ("BIF") regulations. The statutory mandate and the regulations demonstrate an intent to regulate the materials at issue here.

3. Regulatory History – The Federal Register Preamble Language Addresses Both Heat Energy and Chemical Energy, and Shows Intent to Regulate the Activity at Issue Here

As the Board has previously held, the regulatory history as found in Federal Register preamble language can be instructive on what EPA intended by particular regulatory provisions. *Howmet*, 13 E.A.D. at 282, 296-298); *In re Deseret Power Electric Cooperative*, 14 E.A.D. 212, 239 (EAB 2008); *In re Morton L. Friedman and Schmitt Construction Company*, 11 E.A.D. 302 (EAB 2004)); *In re Andrew B. Chase*, slip op. at 15, n.15. EPA has published in the Federal

Register several relevant interpretations and discussions of what is covered by this provision. The January 1985 preamble to the definition of "solid waste" discusses materials burned for energy recovery. *See* 50 Fed. Reg. 614 at 630-31 (Jan. 4, 1985) ("Hazardous Waste Management System; Definition of Solid Waste" final rule). In addition, preambles published later (but prior to the violations at issue) also discuss this concept. Specifically, materials being burned for energy recovery are discussed in the "Hazardous Waste Management System; Burning of Waste Fuel and Used Oil Fuel in Boilers and Industrial Furnaces" (final rule promulgated in November 1985 as part of 40 C.F.R. Part 266, Subpart D), and the proposed and final replacement for that November 1985 Subpart D rule, "Burning of Hazardous Waste in Boilers and Industrial Furnaces" (final rule promulgated as part of 40 C.F.R. Part 266, Subpart H, also known as the "Final BIF Rule"). *See* 50 Fed. Reg. 49,164 (Nov. 29, 1985); 52 Fed. Reg. 16,982 (May 6, 1987); 56 Fed. Reg. 7,134 (Feb. 21, 1991).[9] *See also* 54 Fed. Reg. 43,178 (Oct. 26, 1989); 55 Fed. Reg. 17,862 (Apr 27, 1990).

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[9] The combustion of hazardous waste occurs for two general purposes. Some waste is burned primarily to destroy it. This type of burning takes place in incinerators. Other waste is burned for energy or materials recovery. This occurs in a group of units collectively known as boilers and industrial furnaces ("BIFs"). These units are regulated under 40 C.F.R. Part 266, Subpart H.

When EPA instituted the RCRA hazardous waste regulations in 1980, it chose only to regulate the combustion of hazardous waste in destruction units. EPA determined that further study was needed to determine appropriate regulation for units that burn waste to recover energy or materials. This distinction was consistent with EPA's policy of encouraging legitimate recycling and reclamation.

The Hazardous and Solid Waste Amendments of 1984 mandated that EPA examine the risks posed by combustion activities and to consider what controls should be placed on the burning of hazardous waste for energy recovery. *See* Section 3004(q) of RCRA. 42 U.S.C. § 6924(q). The first phase of this occurred on November 29, 1985, when EPA promulgated regulations covering the burning of hazardous waste for energy recovery in BIFs under Part 266, Subpart D (50 Fed. Reg. 49,164). These standards were largely administrative, covering only the management of the waste prior to burning and notification and recordkeeping. The combustion

a. Preamble to January 1985 Final Rule

First, the January 1985 preamble to the definition of "solid waste" makes clear EPA's intent to regulate under RCRA the burning of spent carbon-containing materials where those materials are injected into the raceway of an iron-making blast furnace, are burned, and serve as a coke substitute. 50 Fed. Reg. 614 at 630-631. The definition of "solid waste" as proposed in 1983 originally excluded secondary material burned for both energy and material recovery. 48 Fed. Reg. 14472 at 14485, fn. 19. EPA specifically revisited this issue between publishing the proposed rule and the final rule.[10] Accordingly, when a secondary material is burned for energy

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devices themselves were not subject to technical performance or emissions standards; nor were the facilities governed under the treatment, storage, and disposal facility ("TSDF") requirements.

The second phase in developing regulations for BIFs began with the February 21, 1991, Federal Register (56 Fed. Reg. 7,134). This rule dramatically changed the requirements for burning hazardous waste in boilers and industrial furnaces by subjecting BIFs to almost all of the TSDF standards, including extensive emissions controls, waste analysis, and permitting requirements. The regulations were expanded to cover more devices and place some limitations on specialized units. Also, as a result of this final rule, Part 266, Subpart D, was entirely removed and the regulations governing the burning of hazardous waste in BIFs were codified in Part 266, Subpart H.

[10] Congress (*see* Section 3004(q)(1) of RCRA, 42 U.S.C. § 6924(q)(1)) and EPA expressed an intention to regulate the very activity the Initial Decision found to be outside of regulation. In this regard, it is worth noting the following from the preamble to the final rule adopting the definition of "solid waste":

> We discuss here which secondary materials are wastes when burned as fuels, and how to distinguish among burning for energy recovery, burning for material recovery, and burning for destruction, as well as the regulatory implications of falling into each of these three categories.
>
> ***
>
> The regulations would also apply when an industrial furnace burns the same secondary material for both energy and material recovery. Examples are blast furnaces that burn organic wastes to recover both energy and carbon values . . . . <u>In taking this view, we thus reconsider and withdraw footnote 19 of the preamble to the proposed rule where we said we would count materials burned in industrial furnaces for both energy and material</u>

recovery and material recovery, like a blast furnace that burns organic waste to recover both energy and carbon values (50 Fed. Reg. at 630), it is a solid waste.

b. Preamble to November 1985 Final Rule

Second, in the 1985 Federal Register preamble to used oil regulations and boiler and industrial furnace regulations[11] published at 40 C.F.R. Part 266, Subpart D, EPA provided an interpretation of the operation of the definition of solid waste, the recycling exemption for material used in an industrial process to make a product, and the exclusion from the exemption triggered when that material recovery includes burning for energy recovery[12] as those concepts

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> recovery as being burned for material recovery. For the reasons given above, we think that was a mistaken idea.
>
> ***
>
> The following examples indicate which secondary materials are wastes when burned for energy recovery.
>
> ***
>
> Facility D burns an [unlisted EP toxic] by-product in an industrial furnace to recover both energy and materials.
>
> D is considered to be burning a hazardous waste, even though the waste is an unlisted by-product, and even though there is some material recovery . . . .

50 Fed. Reg. 614, 630-31 (Jan. 4, 1985) (emphasis added).

[11] The interim regulations were published at 40 C.F.R. Part 266, Subpart D – Hazardous Waste Burned for Energy Recovery. Subpart D was later removed and 40 C.F.R. Part 266, Subpart H – Hazardous Waste Burned In Boilers and Industrial Furnaces (the "Final BIF Rule") was added. 56 Fed. Reg. 7,134 and 7,208 (Feb. 21, 1991).

[12] EPA stated in Federal Register preamble language:

> [W]astes are burned in boilers or industrial furnaces and provide substantial, useful heat energy. Such burning is considered to involve a hazardous waste fuel within the meaning of RCRA section 3004(q).

apply to the burning of injectants in a blast furnace. 50 Fed. Reg. 49,164 (Nov. 29, 1985). In that preamble, EPA explained that "the regulations apply when an industrial furnace burns the same material for both energy and material recovery (e.g., when blast furnaces burn organic wastes to recover both energy and carbon values)." 50 Fed. Reg. at 49,171. EPA further explained that:

> These rules do apply, however, if hazardous wastes (*viz.* any hazardous secondary material (see 40 C.F.R. § 261.2(c)(2), January 4, 1985 and August 20, 1985)) are burned in industrial furnaces or boilers both to recover energy (i.e., to provide substantial, useful heat energy) and for some other recycling purpose, even if energy recovery is not the predominant purpose of the burning. EPA already has taken this position in the rules codifying section 3004(q) of RCRA. 50 FR 28724 (July 15, 1985).

50 Fed. Reg. at 49,167 (emphasis added).

EPA then explained that it had been asked to exclude from regulation a patented blend of hazardous spent solvent recovery still bottoms and other hydrocarbon-based hazardous waste, called "Cadence product 312," which was used in blast furnaces. 50 Fed. Reg. 49,171. EPA explained that:

> Many commenters argued that Cadence product is not subject to regulation as a hazardous waste fuel because it is not burned in the blast furnace for energy recovery. Rather, they argue that Cadence product is burned as an ingredient in the iron-making process to provide carbon, hydrogen, and chlorine and that it only provides incidental energy to the furnace.

Id.

In its analysis, EPA rejected the idea that Cadence was not "burned for energy recovery," concluding that burning Cadence product 312 in an industrial furnace as an injectant replacing

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50 Fed. Reg. at 49,167. As discussed herein, EPA determined in the same Federal Register preamble that blast furnace top gases meet this requirement. EPA, however, also discussed in this Federal Register preamble the chemical reactions that occur in a blast furnace as it converts iron ore to iron. The chemical reactions are also a form of energy provided by carbon-containing injectants. Accordingly, the term "energy recovery" was not limited to "heat" energy, but also encompassed the chemical energy involved in iron making.

some of the coke that would otherwise be used provided both heat energy and reducing gases (i.e., chemicals) used in iron making. In fact, EPA found that liquid fuel injectants provided substantial heat energy to a blast furnace, even though they, at the same time, cool flame temperature. EPA explained that "[t]he net reaction of injected fuels is endothermic (heat absorbing) in this zone. Injected liquid fuels first undergo endothermic vaporization, then exothermic combustion to (ideally) carbon dioxide and water where sensible heat is released, and finally, endothermic dissociation and reduction in the presence of excess carbon provided by the coke to form the reducing gases carbon monoxide and hydrogen."[13] 50 Fed. Reg. at 49,172. EPA then explained both the chemical reactions (chemical energy) provided by the reducing gases (reductants) created by burning the injectant, as well as the useful heat provided by the furnace top gas:

> The amount of sensible heat released during this combustion phase is measured by a fuel injectant's heating value in Btu/lb. Immediately after the fuel is combusted, the combustion products act as ingredients to furnace reactions by being converted to the reducing gases carbon monoxide and hydrogen during endothermic reactions. The fact that fuel injectants release substantial heat energy while providing hydrocarbons for reactions enables operators to reduce coke rates. (As noted above, coke is both the primary fuel and primary source of carbon to the blast furnace.)
>
> The heat energy released from subsequent (i.e., outside the combustion zone) reactions of fuel injectant hydrocarbons is in fact substantial, intentional, and useful contrary to Cadence's claim that it is incidental and unavoidable. As discussed above, furnace top gas is used as fuel in stoves to heat the hot blast, in a boiler plant, or in other heating applications within the steel plant. The excess reducing gas contained in the top gas that was not used to reduce the iron ore gives the top gas substantial heating value. The excess reducing gas is contributed by the coke and fuel injectants, roughly in proportion to the amount of hydrocarbons each provides to the furnace. [The] furnace top gas is a substantial fuel source in that only about one-third of the fuel gas is used to heat the hot blast while two-thirds is available for other uses.
>
> ***

[13] Because the reaction is initially endothermic, the "heat" or temperature provided by the injectant is lower than the heat or temperature already in the raceway, and therefore, would not be felt, or be "sensible."

> Cadence's argument in fact proves too much. It is clear that net furnace reactions are endothermic—heat from the coke and fuel injectants is required to drive reactions that reduce iron ore to metallic iron. Under Cadence's logic that a material involved in an endothermic reaction is not a fuel irrespective of its heating value, the coke would not be a fuel. Yet it is the primary fuel source to the furnace. The fact is that both coke and fuel injectants like the Cadence product serve a dual purpose of providing substantial needed energy and reductants.

50 Fed. Reg. 49,172-49,173 (footnotes omitted) (emphasis added). In these discussions, EPA makes clear that injectants provide both heat energy (even if the initial reaction of the injectant is endothermic) and chemical energy (as provided by reductants), stating that "the combustion products act as ingredients to furnace reactions by being converted to the reducing gases carbon monoxide and hydrogen during endothermic reactions" and "fuel injectants release substantial heat energy while providing hydrocarbons for reactions" and that the "excess reducing gas contained in the top gas that was not used to reduce the iron ore gives the top gas substantial heating value."[14] *Id.* (emphasis added). It is the reducing gases formed by the burning of the injectant that provide chemical energy.

EPA's understanding of blast furnace operations expressed in 1985, and its conclusion that Cadence product 312 was a solid waste burned for energy recovery, is wholly consistent with EPA's application of the regulations in this case. As EPA's expert witness Professor Fruehan explained at the hearing:

> Q. So do you have a view about the current relevance of EPA's 1985 understanding of blast furnace operations and the use of injectants?
>
> A. I think it's a reasonably good description of what's going on.

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[14] EPA's expert, Professor Fruehan, and Respondents' expert, Dr. Joseph Poveromo, both discussed the use of the blast furnace top gases to provide sensible heat energy by being used as a fuel in the stoves that are used to make the hot air blast. Tr. V at 1125, 1133 (Fruehan); Tr. XI at 2570-2571 (Poveromo).

Q. And it's current?

A. Yes. They talk about the energy coming in from the initial combustion of the material. They talk about the CO and hydrogen and the chemical energy that it carries and they talk about the energy in the off-gas.

Tr. IV at 1128-1130 (Fruehan) (emphasis added). Professor Fruehan's testimony explains that injectants provide both heat energy and chemical energy that reduces the iron ore.

Respondents' expert, Dr. Joseph Poveromo, agreed that that reducing gases can provide chemical energy:

Q: You're not talking about the reducing gases providing chemical energy, are you?

A. The reducing gases, you know, can provide a chemical energy but they are mainly a reductants [sic] for the process.

Tr. X at 2572 (Poveromo). Respondents' expert Frederick Rorick acknowledged the same, stating:

> "You're asking me does it convert to energy. A lot of this comes down just like blast furnace terminology to what we mean by energy. Okay? My understanding [of] energy is the ability to do work. Any chemical reaction when elements change state, there is a change in energy. So if you're asking me is there any exchange, energy exchange in these various reactions in the furnace, of course there is. Of course there is. If you change an iron Fe2O3 to Fe3O4, there's an energy change in that molecule because the molecule has changed state."

Tr. X at 2482-2483 (Rorick).

Finally, CIS acknowledged in writing that injectants are a feedstock used to sustain a chemical reaction in the production of iron. In response to an EPA information request, WCI Steel, wrote that "the purpose of each injection of fuel oil is as a supplemental (or auxiliary") fuel in lieu of higher cost natural gas and coke." CX24 at EPA-13130. The response attached a letter from CIS, in which CIS explained that "the purpose of each injection is to supply carbon feedstock to sustain a chemical reaction in the production of iron." CX24 at EPA-13137.

The record evidence showing that injectants provide both heat and chemical energy is consistent with the Cadence discussion.

c. Preamble to May 1987 Proposed Rule

In 1987, EPA proposed changes to 40 C.F.R. Parts 260, 261, 264, 265, 266, 270, and 271. 52 Fed. Reg. 16,982 (May 6, 1987). Among other things, these proposed changes essentially replaced 40 C.F.R. Part 266, Subpart D with 40 C.F.R. Part 266, Subpart H. EPA explained that its proposal "would expand controls on hazardous waste combustion to regulate the burning of hazardous waste fuels in boilers and industrial furnaces." *Id.* The term "burned for energy recovery" appeared in the proposed regulations to be published at 40 C.F.R. Part 266, Subpart H The preamble to the proposed regulations again included a discussion of blast furnace operations. The blast furnace discussion in the preamble to the proposed regulations does not discuss heat energy, but does discuss energy in the form of chemical energy (although not using that term). EPA explained:

> A blast furnace is a vertical shaft furnace that uses carbon in the form of coke to reduce iron oxide ores to iron in a chemically-reducing atmosphere by the action of carbon monoxide (CO). CO is formed primarily by oxidizing carbon (i.e., coke) to CO with preheated air (blast air).
>
> Solid raw materials (ore, coke, flux) are charged into the top of the blast furnace and preheated air is "blasted" through tuyeres near the bottom of the furnace. Frequently, hydrocarbon additives (gas, liquid, or solid) or oxygen are also injected through the tuyeres. Present practice typically includes injecting fuel oil through the tuyeres.
>
> The gases exiting from the top of the furnace (top gas) have high CO levels. The top gas from the blast furnace is generally cleaned of particulates by cyclones and wet scrubbers and then used as fuel primarily in air preheating stoves and on-site boilers.
>
> The stoves are vertical furnaces that preheat the blast air by indirect heating of the air conveying chambers in the stoves to approximately 1,600 ^{0}F. The stoves are equipped with burners capable of efficiently utilizing blast furnace top gas for fuel.
>
> ***

The top gas is also typically used as fuel in coke ovens, reheat furnaces, and internal combustion engines.

***

Until recently, hazardous waste was blended with fuel oil in about a 50/50 blend and used as a fuel injectant by the LTV Steel Company. Before the company stopped accepting hazardous waste fuels in the spring of 1986, approximately 25 million gallons of hazardous wastes were burned annually in five blast furnaces.[7] Although EPA is not aware of blast furnace systems burning hazardous waste fuels at this time, the Agency believes that blast furnace systems can comply with the requirements proposed today, and, thus, safely burn hazardous waste fuels.[8]

[7] EPA understands that the LTV Steel Company chose not to comply with the hazardous waste fuel storage standards that became effective on May 29. 1980, and thus terminated their hazardous waste fuel activities.

[8] Radian Corporation. *Destruction and Removal of POHCs In Iron Making Blast Furnaces,* December 31, 1985.

52 Fed. Reg. at 16,987.

EPA believed it was necessary to regulate the burning of hazardous waste in blast furnaces. It is also clear from the adoption of the definition of "industrial furnace" at 40 C.F.R. § 260.10[15] and promulgation of the BIF rule, which regulates the burning of hazardous waste in blast furnaces, that EPA intended to regulate the activity at issue here.

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[15] The regulation provides:

Industrial furnace means any of the following enclosed devices that are integral components of manufacturing processes and that use thermal treatment to recover materials or energy:

***

(6) Blast furnaces

***

40 C.F.R. § 260.10. The phrase "use thermal treatment to recover . . . energy" seems the equivalent of the phrase "burn for energy recovery."

The preamble to the proposed regulations also explained the scope of the proposed regulations, and EPA's shift away from distinguishing between high and low heating value wastes being "burned for energy recovery."

> Today's proposed rules would regulate the burning of hazardous waste in boilers and industrial furnaces irrespective of the heating value of the hazardous waste. This proposed rule would, therefore, supersede the Agency's current policy of regulating the burning of low heating value wastes in these devices as incineration, subject to the applicable hazardous waste incinerator standards of Subpart 0 of Parts 264 or 265.

52 Fed. Reg. at 16,989 (emphasis added).

d. Preamble to February 1991 Final Rule

Finally, in 1991 EPA published 40 C.F.R. Part 266, Subpart H – Hazardous Waste Burned In Boilers and Industrial Furnaces. 56 Fed. Reg. 7,134 and 7,208 (Feb. 21, 1991). With the promulgation of Subpart H, Subpart D (the initial regulation of combustion units, see Section II.A.3.b., above) was removed. *Id.*

40 C.F.R. § 266.100(a), as promulgated,[16] provided:

> The regulations of this subpart apply to hazardous waste burned or processed in a boiler or industrial furnace (as defined in § 260.10 of this chapter) irrespective of the purpose of burning or processing, except as provided by paragraphs (b), (c), and (d) of this section. In this subpart, the term "burn" means burning for energy recovery or destruction, or processing for materials recovery or as an ingredient. The emissions standards of §§ 266.104, 266.105, 266.106, and 266.107 apply to facilities operating under interim status or under a RCRA operating permit as specified in §§ 266.102 and 266.103.

56 Fed. Reg. at 7,208. 40 C.F.R. § 266.100(a) (now at 40 C.F.R. § 266.100(c)) listed the hazardous waste and facilities not subject to regulation under Subpart H. In the preamble to this final rule, EPA explained that the new regulations applied to any industrial furnace burning

[16] The language of 40 C.F.R. § 266.100(a) has not changed.

processing any hazardous waste for any purpose – energy recovery, material recovery, or destruction -- with some exceptions. 56 Fed. Reg. at 7,138.

In sum, EPA (1) expressed a clear intent to regulate the activity at issue in this matter as demonstrated by the Cadence discussion; (2) determined that carbon-containing injectants burned in the raceway of an iron-making blast furnace provided substantial, useful heat energy, even if the oxidation occurring in the raceway is endothermic, because the heat energy released from subsequent (i.e., outside the combustion zone) reactions of fuel injectant hydrocarbons (e.g., top gases used to heat the hot blast stoves, other plant boilers, etc.)[17] is in fact substantial, intentional, and useful; (3) determined that the combustion products of the injectants also act as ingredients to furnace reactions by being converted to the reducing gases carbon monoxide and hydrogen during endothermic reactions, and that these gases reduce iron oxide ores to iron in a chemically-reducing atmosphere by the action of carbon monoxide – the chemical reduction acknowledged by the parties to be a form of energy; (4) determined that net furnace reactions are endothermic—heat from the coke and fuel injectants is required to drive reactions that reduce iron ore to metallic iron and that both coke and fuel injectants like the Cadence product, serve a dual purpose of providing substantial needed energy and reductants; and (5) promulgated final regulations at 40 C.F.R. Part 266, Subpart H, demonstrating its intent to regulate the activity at issue in this matter.

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[17] The Presiding Officer held that "a preponderance of the evidence in this proceeding fails to establish that the injectants supplied by Respondent CIS to the blast furnace at the WCI Steel Facility produced substantial and useful heat energy at that facility either upon initial combustion in the raceway of the furnace in a manner similar to coke or by virtue of excess reducing gases." Initial Decision at 87. In making this finding, the Presiding Officer found that EPA failed to present evidence with respect to the operation of the WCI blast furnace and the specifics of how the top gases were used by WCI. *Id.* at 84-87.

4. EPA's Long-Standing Interpretation Definitively Answers the Board's Question

As detailed above, the regulatory history reflects the dual goals of RCRA, to encourage legitimate recycling, balanced against the need to address risks posed by hazardous waste combustion, and EPA's response to those concerns and risks through development of the BIF regulations.[18] The preamble language demonstrates that the "energy" being recovered could include both heat energy and chemical energy. Importantly, EPA's conclusion in the relevant preambles that these materials are burned in blast furnaces for energy recovery is a contemporaneous interpretation of the regulatory phrase "burned for energy recovery" and the EAB generally defers to such statements. *Howmet*, 13 E.A.D. at 282; *In re Andrew B. Chase*, 16 E.A.D. __, slip op. at 15, n.15 (EAB relied on EPA internal memorandum interpreting the term "annual"). Rather than a "litigation position advanced by enforcement counsel" that is "not entitled to full deference" (Initial Decision at 40), the Agency made a determination *at the time the regulations were being developed*, after taking public comment, that these types of carbon-containing secondary materials are burned in blast furnaces for energy recovery. Here, the Presiding Officer, after taking pains to explain how closely matched the evidence presented by competing experts was (Initial Decision at 66-78, 83), rejected the Agency's conclusions regarding burning for energy recovery as discussed in connection with Cadence and with LTV Steel. ("Based on the foregoing discussion, the undersigned is inclined to credit the opinion of Dr. Poveromo over that of Professor Fruehan, which undermines Complainant's position." Initial Decision at 72.) The Presiding Officer instead should have looked at the Cadence

[18] Concern over the potential for sham recycling prompted EPA to shift the burden of proving the exceptions to the definition of solid waste onto the party claiming the exemption. See 40 C.F.R. § 261.2(f). The shift is discussed below.

discussion, as well as the LTV blast furnace operations discussion in the preamble for May 1987 proposed 266 regulations, and given deference to those determinations. *See* 52 Fed. Reg. at 16,987. The Agency was entitled to deference for its expertise on blast furnace operations, and its determination that injectants are burned for energy recovery in a blast furnace, which the Agency published in: (1) the preamble to the 1985 final rule published at 50 Fed. Reg. 49,171-49,174 and (2) the preamble to a proposed rule at 52 Fed. Reg. at 16,987. Rather than a litigation position, the preamble language reflects a long-standing consistent and considered Agency position.[19]

5. The Initial Decision is Inconsistent with Portions of the BIF Regulations and the Underlying Reasons for Regulating Hazardous Waste Combustion

The Initial Decision, by holding that a carbon-containing material that is "recycled" by being burned in blast furnace is not a "solid waste" (because that burning does not result in energy recovery), is at odds with that part of the BIF rule that regulates the operation of blast furnaces using carbon-containing hazardous waste injectants. *See* 40 C.F.R. § 266.100, et seq. As discussed above, Congress and EPA were concerned over the environmental effects of hazardous waste combustion. Hence, the development of the BIF regulations. As a practical matter, there is no environmental protection distinction between the risks posed by the handling, storage and combustion of those hazardous wastes that are burned for heat energy recovery and those that are burned for chemical energy recovery. As there is no difference in the risks posed, there is no basis for making the distinction between the two. If "burning for energy recovery"

[19] Ironically, the Presiding Officer, after rejecting EPA's statements in finding that the plain meaning of the general term "energy" included only heat energy, then relied on EPA's previous statements to arrive at the erroneous standard that burning for energy recovery requires that the material contribute substantial and useful heat to the process. Initial Decision at 47.

includes only the recovery of heat energy, then some energy recovery combustion is regulated and while other energy recovery combustion is unregulated. And EPA will have drawn a distinction in the regulations that has no sound basis in environmental protection. The Supreme Court has addressed statutory construction when the plain meaning of a statute leads to an absurd or unreasonable result. The Court ordinarily looks to plain meaning of the statute; "when that meaning has led to absurd or futile results, however, this Court has looked beyond the words to the purpose of the act. Frequently, however, even when the plain meaning did not produce absurd results but merely an unreasonable one plainly at variance with the policy of the legislation as a whole this Court has followed that purpose rather than the literal words." *U.S. v. American Trucking Assn.*, 310 U.S. 534, 543 (1940).

B. Did EPA, prior to initiating this enforcement proceeding, provide notice of its interpretation that the phrase "burned for energy recovery" extends to burning for the recovery of chemical energy?

Yes. As stated above, EPA believes that the regulations themselves answer the question whether the term energy recovery is limited solely to heat energy, as there is nothing in the language that provides a basis to limit the term to heat energy to the exclusion of other types of energy that could be recovered through combustion. However, if the regulations are not determined to be clear enough on this issue, the preambles quoted from and cited to in the previous response provide a definitive answer to the question: EPA clearly indicated that secondary materials of the type involved here when burned in an industrial furnace for their chemical values were "burned for energy recovery" and therefore were regulated solid and hazardous wastes.

As the Board provided in *In re Coast Wood Preserving*:

> [P]roviding fair notice does not mean that a regulation must be altogether free from ambiguity. Indeed, the case law shows that even where regulatory ambiguity exists, the

> regulations can still satisfy due process considerations. . . Thus, the question is not whether a regulation is susceptible to only one possible interpretation, but rather, whether the particular interpretation advanced by the regulator was ascertainable by the regulated community.

In re Coast Wood Preserving, 11 E.A.D. 59, 81 (EAB 2003) (quoting *In re Tenn. Valley Auth.*, 9 E.A.D. 357, 412 (EAB 2000)). *See also*, *Howmet*, 13 E.A.D. at 303-307. Note that in *Howmet*, the EAB also emphasized the importance of the regulatory history and EPA guidance as informing a regulated entity of EPA's regulatory intent and thus providing fair notice. *Id.* at 306-307. Looking to the text of the regulation, the regulatory scheme as a whole (as discussed above), and the regulatory history and interpretations in preamble language (also discussed above), "there was ample information available" by which CIS "could have determined the Agency's orientation and interpretation with ascertainable certainty." *Id.* at 307; *Id.* at footnote 62. *See also, Gen. Elec. Co. v. U.S. EPA*, 53 F.3d 1324, 1329 (D.C. Cir. 1995).

CIS appears to have understood the concept that injectants provide chemical energy to the iron making process. CIS acknowledged in writing that injectants are a feedstock used to sustain a chemical reaction in the production of iron. In response to an EPA information request, WCI Steel, wrote that "the purpose of each injection of fuel oil is as a supplemental (or 'auxiliary') fuel in lieu of higher cost natural gas and coke." CX24 at EPA-13130. The response attached a letter from CIS in which CIS explained that "the purpose of each injection is to supply carbon feedstock to sustain a chemical reaction in the production of iron." CX24 at EPA-13137. Thus it appears that Respondents understood that chemical energy may be a component of energy recovery.

C. If not, was it appropriate for Region 5 to rely on this interpretation in seeking civil penalties for past behavior?

Because we believe that EPA clearly provided fair notice, this question is not applicable.

D. Did the hydrocarbon materials distributed by Carbon Injection Systems to WCI Steel, Inc., supply substantial, useful heat energy upon combustion in the raceway of WCI Steel's iron blast furnace? Specifically, the Board requests that you address the ALJ's determination that the hydrocarbon materials supplied by Carbon Injection Systems did not contribute substantial, useful energy to the WCI Steel iron blast furnace "because of their net consumption of energy and consequential cooling effect in the raceway." Initial Decision at 83.

With respect to "heat energy" "upon combustion in the raceway," the answer is no, the CIS materials did not provide substantial, usable heat energy in the raceway. Tuyere-injected carbon-containing fuels undergo net endothermic (i.e., heat-absorbing) reactions in the combustion zone and those reactions actually cool flame temperatures. However, carbon-containing fuel injectants first behave as bona fide fuels by combusting to (ideally) carbon dioxide and water. The amount of sensible heat released during this combustion phase is measured by a fuel injectant's heating value in Btu/lb.

With respect to "heat energy" outside of the raceway, the answer is yes, the CIS materials did provide substantial, useable heat energy, assuming the WCI blast furnace used the top gases for purposes like fueling the stoves that typically are used to heat the hot air blast.[20] EPA presented no direct evidence regarding the ultimate disposition of the top gases from the WCI blast furnace. But the experts did agree that the top gases are used to heat the hot air blast. Tr. V

[20] The administrative record for the BIF regulations contains a blast furnace gas utilization study. The study showed that the CIS facility, when it was owned and operated by LTV Steel, used 39% of the blast furnace gas in stoves, and 57% of the blast furnace gas in boilers. See, EPA-HQ-RCRA-1987-0024-0293. Information about this document can be found at www.regulations.gov. The study is on microform, and can be requested from RCRA docket staff. The EAB can take administrative notice of the content of information in the public domain. *Howmet* at n. 32.

at 1074-1075 (Fruehan), Tr. XI at 2570-71 (Poveromo). However, as discussed below, the burden was on Respondents to show that the WCI blast furnace did not use the top gases in other parts of its operations.

With respect to "chemical energy," unconditionally the answer is yes, the CIS materials did provide substantial useable chemical energy. Net furnace reactions are endothermic. However, heat from the coke and fuel injectants is required to drive reactions that reduce iron ore to metallic iron. And, both coke and fuel injectants serve to provide substantial needed energy and reductants providing the chemical energy which drives chemical reactions changing iron ore to iron. When elements change state, there is a change in energy. Energy exchanges occur in the various reactions in the furnace. *See* Tr. X at 2482-2483 (Rorick); CX-24 at EPA-13137.

E. Which party bears the burden of proof on the various issues raised in the case? In particular, explain whether you agree or disagree with the ALJ's discussion of the burden of proof in footnotes 29 and 30 of the Initial Decision. *See* Initial Decision at 48 nn. 29-30.

In this matter, EPA has the burden of proof (comprised of the burdens of presentation and persuasion) that the violations occurred as set forth in the Complaint and that the relief sought in the Complaint is appropriate. Following EPA's establishment of a prima facie case, the Respondents have the burden of presenting any defense to the allegations set forth in the Complaint and any response or evidence with respect to the appropriate relief. The Respondents also have the burden of proof (again, comprised of both the burdens of presentation and persuasion) for any affirmative defenses. The Presiding Officer's discussion of burden of proof in footnotes 29 and 30 of the Initial Decision is incorrect in one respect, as described below.

1. Burden of Proof Discussion in the Initial Decision

In the Initial Decision in this matter, the Presiding Officer addressed burden of proof in several places – most notably in Sections V and VI of the Initial Decision.[21] In Section V, the Presiding Officer introduces the topic and cites 40 C.F.R. § 22.24(a), which states in pertinent part "following complainant's establishment of a prima facie case, respondent shall have the burden of presenting any defense." Initial Decision at 23-25. The Presiding Officer in Section V further notes that with regard to proving whether or not a material is "solid waste" under the federal regulations (or "waste" under the Ohio regulations), once the complainant satisfies its initial burden of demonstrating that the material qualifies as such, the respondent bears the burden of producing evidence that the material is exempt or excluded from regulation. Initial Decision at 24; OAC § 3745-51-02(F) [40 C.F.R. § 261.2(f)].

The introductory paragraph to Section VI is specific to the parties in this action, stating:

> Thus a critical issue in adjudicating Respondents' liability…is whether the materials supplied to Respondent CIS by JLM and IFF satisfy the definition of "waste" set forth at OAC § 3745-51-02. Complainant bears the initial burden of production and ultimate burden of persuasion on this threshold issue. Respondents, in turn, bear the burden of establishing the applicability of any exclusions.

Initial Decision at 25. This explanation of burden is repeated later in Section VI, at Section VI.A.2.c., in footnote 29. Initial Decision at 48, n. 29.

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[21] *See also* references to the burden of proof later in the Initial Decision at 83 ("While some of the evidence presented by Complainant undoubtedly weighs in favor of its position, namely Respondents' documented use of the term "fuels" to describe injectants, the undersigned finds it to be insufficient to sustain Complainant's burden of persuasion on this particular issue"), p. 85 at footnote 39, 87 ("Thus, Complainant has not met its burden on this issue, and the JLM and IFF materials are found not to be "wastes" as defined by OAC § 3745-51-02(C)(2)"), and 91 ("Complainant did not sustain its burden in this proceeding of demonstrating by a preponderance of the evidence that the materials at issue constituted a "waste," as that term is defined by OAC § 3745-51-02").

2. In This Matter EPA Has the Initial Burden of Proof to Present a Prima Facie Case, and the Burden Then Shifts to the Respondents

As explained in the procedural rule cited in the Initial Decision, 40 C.F.R. § 22.24(a), in an administrative action initiated under the Consolidated Rules, such as this, the complainant has the burdens of presentation and persuasion that the violation occurred as alleged in the complaint, and that the relief sought is appropriate. *See* 40 C.F.R. § 22.24(a); *In re San Pedro Forklift, Inc.*, CWA Appeal No. 12-02, slip op. at 41 (EAB, April 22, 2013), 15 E.A.D. __ ("Under the Consolidated Rules of Practice that govern this proceeding, the complainant has the burden of presenting a prima facie case of violation, and the respondent has the burden of presenting evidence to rebut the prima facie case...The complainant has the ultimate burden of persuasion that the violations occurred as alleged in the complaint [citations omitted]"); *In re General Motors*, 14 E.A.D. 1, 53 (EAB 2008); *In re Euclid of Virginia, Inc.*, 13 E.A.D. 616, 625 (EAB 2008).

As for liability, following EPA's establishment of a prima facie case, the respondent has the burden of presenting any defense to the allegations set forth in the complaint and any response or evidence with respect to the appropriate relief. *See* 40 C.F.R. § 22.24(a); *San Pedro Forklift,* slip op. at 41; *In re City of Salisbury*, 10 E.A.D. 263 at 278-279, 289-290 (EAB 2002). The EAB in *In re New Waterbury, Ltd.* provides a detailed explanation of burden of proof:

> The term "burden of proof"...encompasses two concepts: the burden of production, and the burden of persuasion. The first of these to come into play is the *burden of production* -- that is, the "duty of going forward with the introduction of evidence." This burden may shift during the course of litigation; if a complainant satisfies its burden of production, the burden then shifts to the respondent to produce, or go forward with the introduction of, rebuttal evidence. The *burden of persuasion* comes into play only "if the parties have sustained their burdens of producing evidence and only when all of the evidence has been introduced." This burden refers to what a "litigating proponent must establish in order to persuade the trier of facts of the validity of his claim." Importantly, this burden does not shift between the parties during the course of litigation.

In re New Waterbury, 5 E.A.D. 529, 536-37, n. 16 (EAB 1994) (citations omitted) (emphasis added). *See also In re Aguakem Caribe, Inc.*, Docket No. RCRA-02-2009-7110, 2011 EPA ALJ LEXIS 24, at **41-44, 81-82, 85-87 (Dec. 22, 2011) (finding that EPA met its prima facie burden of demonstrating that materials were "solid waste" by virtue of being "abandoned" and the burden then shifted to Respondents to demonstrate that the materials were excluded or exempt from regulation). The respondent also has the burden of proof (encompassing both the burden of production and the burden of persuasion) of presenting any affirmative defenses. *See* 40 C.F.R. § 22.24(a); *Euclid*, 13 E.A.D. at 625 ("One who asserts an affirmative defense bears the burdens of presentation and persuasion"); *In re J. Phillip Adams*, 13 E.A.D. 310, 321 (EAB 2007); *In re City of Marshall*, 10 E.A.D. 173, 180 (EAB 2001) ("The respondent has the burdens of presentation and persuasion for any affirmative defenses").

In addition, when the issue is whether or not a material is "solid waste" under RCRA (or, in the case of the Ohio regulations, whether or not a material is "waste" under the state program), the regulations emphasize that once EPA presents a prima facie case that the material is a "solid waste," the respondent has the burden of demonstrating that a particular secondary material was not a solid waste (or was exempt from regulation) because it was recycled in a particular manner.

> (F) *Documentation of claims that materials are not wastes or are conditionally exempt from regulation.* Respondents in actions to enforce regulations adopted under Chapter 3734 of the Revised Code who raise a claim that a certain material is not a waste, or is conditionally exempt from regulation, must demonstrate that there is a known market or disposition for the material, and that they meet the terms of the exclusion or exemption. In doing so, they must provide appropriate documentation (such as contracts showing that a second person uses the material as an ingredient in a production process) to demonstrate that the material is not a waste, or is exempt from regulation. In addition, owners or operators of facilities claiming that they actually are recycling materials must show that they have the necessary equipment to do so.
> OAC 3745-51-02(F) [40 C.F.R. § 261.2(f)]

See 50 Fed. Reg. 614, 642 (Jan. 4, 1985) ("Furthermore this type of claim [a claim that a particular secondary material was not a solid waste (or was conditionally exempt from regulation) because it was recycled in a particular manner] is an affirmative defense, for which it is appropriate that the person asserting the defense have the burden of proof"); *In re Chem-Solv*, RCRA (3008) Appeal No. 14-12, slip op. at 18 (EAB, Jan. 26, 2015), 16 E.A.D. __, ("[Respondent] has failed to meet its burden of demonstrating that the pit water is not a solid waste or otherwise exempt from regulation"); *General Motors*, 14 E.A.D. at 53-55 (RCRA matter involving "spent" material regulated under 40 C.F.R. § 261.2(a)(2)(ii), (c) and Table 1, where EAB analyzed the continued use policy as an affirmative defense "which is conceptually similar" to underlying the RCRA provisions which exempt certain material from categorization as "solid waste" under 40 C.F.R. § 261.2(a)(2)(e)(1)(i-iii)); *In re Zaclon, Inc., et al.*, Docket No. RCRA-05-2004-0019, 2007 EPA ALJ LEXIS 20, at **14-15 (June 4, 2007) (citing to 40 C.F.R. § 261.2(f) and OAC 3745-51-02(F) for the proposition that "the burden of proof as to establishing an exception to the definition of "solid waste" is set out in the regulations"); *In re Ashland Chemical Co.*, Docket No. RCRA V-W-86-R-13, 1987 EPA ALJ LEXIS 19, at *47 (June 22, 1987) (citing to 40 C.F.R. § 261.2(f) and stating that the burden of proof was on the respondent to prove that its solid waste fell under an exemption). Respondents agreed with this analysis in their Initial Joint Post-Hearing Brief, stating: "Respondents have the burden of proving that the [recycling] exclusion[22] applies, by a preponderance of the evidence." Respondents' Initial Joint Post-Hearing Brief at 16.

[22] *See* OAC § 3745-51-02(E)(1) [40 C.F.R. § 260.2(e)(1)], which provides: (1) Materials are not solid waste when they can be shown to be recycled by being: (i) Used or reused as an ingredient in an industrial process to make a product, provided the materials are not being reclaimed or (ii) Used or reused as effective substitutes for commercial products.

As for the proposed penalty, EPA "has the burden of proof on the appropriateness of the penalty". *See In re John A. Capozzi*, 11 E.A.D. 30 (EAB 2003) (citations omitted); *In re Titan Wheel Corp. of Iowa*, 10 E.A.D. 526, 530, n. 10 (EAB 2002), *aff'd, Titan Wheel Corp. v. EPA*, 291 F.Supp.2d 899 (S.D. Ia. 2003), *aff'd, Titan Wheel Corp. v. EPA*, 2004 U.S. App. LEXIS 24330 (8th Cir. 2004). EPA does not bear the "burden of proof with respect to any individual factor; rather the burden of proof goes to [EPA's] consideration of all the factors." *In re FRM Chem, Inc.*, 12 E.A.D. 739, 751 (EAB 2006) (quoting *New Waterbury*, 5 E.A.D. at 539). Furthermore, "an 'appropriate' penalty is one which reflects a consideration of each factor the governing statute requires to be considered, and which is supported by an analysis of those factors." *In re B.J. Carney Industries, Inc.*, 7 E.A.D. 171, 217 (EAB 1997) (citations omitted), appeal dismissed as moot, 200 F.3d 1222 (9th Cir. 2000). Once the complainant establishes a prima facie case of the appropriateness of the relief sought, "respondent shall have the burden of presenting any . . . response or evidence with respect to the appropriate relief." 40 C.F.R. § 22.24(a). *See In re Century Oil Acquisition Corp.*, Docket No. RCRA-03-2006-0088, 2007 EPA ALJ LEXIS 22, at *33 (Sept. 17, 2007).

Finally, each matter of controversy is decided by the Presiding Officer upon a preponderance of the evidence. 40 C.F.R. § 22.24(b). *Euclid*, 13 E.A.D. at 625. As one court explained:

> "Preponderance of evidence" is the degree of relevant evidence which a reasonable mind, considering the record as a whole, might accept as sufficient to support a conclusion that the matter asserted is more likely to be true than not true.

In re Harmon Electronics, Inc., Docket No. RCRA-VII-91-H-0037, 1994 EPA ALJ LEXIS 25, at *5 (Dec. 12, 1994), *rev'd on other grounds, Harmon Industries, Inc. v. Carol M. Browner, et al.*, 19 F. Supp.2d 988 (1998), *aff'd district court*, 191 F.3d 894 (8th Cir. 1999). It is well settled

that "[t]o establish a fact by a preponderance of the evidence means to prove that the fact is more likely true than not true." *Fischi v. Armitage*, 128 F.3d 50, 55 (2d Cir. 1997) (citations omitted).

3. The ALJ's discussion of burden of proof in footnotes 29 and 30 of the Initial Decision is incorrect

The Presiding Officer's discussion of burden of proof in footnotes 29 and 30 of the Initial Decision is incorrect. Footnote 29 of the Initial Decision states:

> Respondents bear the burden of establishing the applicability of an exclusion or exemption only after Complainant has met its burden of demonstrating that the injectants supplied by Respondent CIS did, in fact, supply substantial and useful heat energy to the blast furnace at the WCI Steel Facility upon combustion. Thus, the initial burden lies with Complainant.

Initial Decision at 48, n. 29. Footnote 30 then assesses the evidence presented at hearing regarding this issue: whether or not the injectants supplied by Respondent CIS did, in fact, supply substantial and useful heat energy to the blast furnace at the WCI Steel Facility upon combustion. EPA had the burden to prove that the material in question was a "solid waste" because it was "recycled" by being "burned for energy recovery." OAC § 3745-51-02(c) [40 C.F.R. § 261.2(c)]. It is our position that the Presiding Officer erred in determining that the only way a material is burned for energy recovery is if it provides substantial and useful heat energy. As explained above, material can also be burned for chemical energy and fall under OAC § 3745-51-02(c) [40 C.F.R. § 261.2(c)]. Therefore, the Presiding Officer's description of the burden of proof is incorrect as it is premised on an erroneous standard for what had to be proved.

To put this error in a broader context, at hearing EPA had the burden to prove the following: (1) Respondents are persons; (2) who treated, stored, or disposed of; (3) hazardous waste[23] identified or listed under 40 C.F.R. Part 261; and (4) violated the various RCRA

[23] In order to be a "hazardous waste" a material must first be a "solid waste."

requirements alleged in counts 1-10 of the Complaint (storage and treatment of hazardous waste without a permit or interim status, waste analysis, personnel training, etc.). *See In re Chem-Solv, Inc.*, 2014 EPA ALJ LEXIS 14 at *143 (June 5, 2014). To address the question of whether the material was a solid waste, EPA had the burden to prove that the material was (1) a secondary material (namely, a "byproduct" in the case of the JLM material, Unitene AGR and Unitene LE[24], and a "spent material" or "sludge" in the case of Unitene AGR) listed on the left side of Table 1 in OAC § 3745-51-02 [40 C.F.R. § 261.2] and (2)"recycled" by being "burned for energy recovery" in accordance with column 2 of Table 1 of OAC § 3745-51-02 [40 C.F.R. § 261.2], (solid wastes are marked in the table with an asterisk (*)). *See* Complainant's Initial Post-Hearing Brief at V.3.a.1.b.i-iii. Once EPA established its prima facie case on liability, the burden shifted to the Respondents to present any defense to the allegations set forth in the Complaint. Respondents also had the burden of proof for the affirmative defenses it raised, the fair notice doctrine and the recycling exemption at OAC § 3745-51-02(E)(1) [40 C.F.R. § 261.2(e)(1)].

III. CONCLUSION

At hearing EPA established a prima facie case as to all elements of liability for each count in the Complaint. Respondents failed to present an adequate defense to the allegations in the Complaint. Specifically, Respondents failed to meet their burden of presenting evidence to rebut the prima facie case which EPA established. Respondents also failed to meet their burden of proof on their fair notice doctrine and recycling exemption affirmative defenses. Furthermore, at hearing EPA established that the relief sought in the Complaint is appropriate. The

[24] Or, in the alternative, Unitene AGR and Unitene LE were each a "commercial chemical product". OAC § 3745-51-02 [40 C.F.R. § 261.2] at Table 1.

Respondents failed to provide an adequate response or sufficient evidence with respect to the appropriate relief in this matter.

We appreciate the opportunity to provide the Board with this information, and we are ready to provide any other information the Board deems necessary in this matter, including at oral argument.

Respectfully Submitted,

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8/18/15
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CERTIFICATE OF SERVICE

In re: Carbon Injection Systems LLC, Scott Forster, and Eric Lofquist
RCRA Appeal No. 15-1

I certify that the foregoing "Opening Brief of the United States Environmental Protection Agency", dated August 18, 2015, was sent this day in the following manner to the addressees listed below:

An electronic filing was made to:

Clerk of the Board
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Environmental Appeals Board
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18 August 2015
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