UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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File:NPCD/FOB;CHRON-READING;AUTHOR:/Letter to ISRI
RE: Processing of auto shredder residue into recycled products for the auto industry

JUL 28 1999

Edward Daniels
Section Manager, Process Evaluation
Energy Systems Division
Argonne National Laboratory
9700 South Cass Avenue
Building 362
Argonne, Illinois 60439-4815

Dear Mr. Daniels:

This letter is in response to your inquiry of July 7, 1999 to Ms. Sara McGurk of my staff. In your letter you ask several questions regarding the "Final Rule" or PCB Disposal Amendments. My staff has reviewed your questions and our response follows.

PCB Bulk Product Waste

Question 1: "PCB Bulk Product Waste" is defined as "waste derived from manufactured products containing PCBs…at any concentration where the concentration at the time of designation for disposal was ≥50 ppm PCBs…" and then goes on to state that "PCB bulk product waste includes…(2) PCB containing waste from the shredding of automobiles…(3) Plastics…"

Does this mean that all shredder residue waste is considered as bulk product waste regardless of the PCB concentration (presumably because of past experience such as the Office of Solid Waste Research that showed the extreme variability of PCB measurement in shredder residue) or is it considered bulk product waste only if the "concentration at the time of designation for disposal was ≥50 ppm"?

Response 1: No, all shredder residue is not considered as PCB bulk product waste. If the PCB concentration of the original manufactured product was ≥50 ppm PCBs at the time of designation for disposal, then the product and resulting shredder residue are PCB bulk product wastes. PCB bulk product waste is generated at the point of disposal of manufactured products which contain PCBs at ≥50 ppm. PCB bulk product waste which is sent to the shredder is already "designated for disposal" when it arrives at the shredder. Generation of shredder residue does not change the disposal status of the PCB bulk product waste present in the residue. Therefore, if shredder residue is the result of shredding materials that were manufactured with PCBs ≥50 ppm, then the shredder residue is a PCB bulk product waste regardless of its PCB concentration after shredding.

CONCURRENCE

SYMBOL	7404							
SURNAME	McGurk, S							
DATE	7/27/99							

EPA Form 1320-1A (1/90)

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Question 2: Does this mean that all plastics are considered as bulk product waste regardless of the PCB concentration or are they considered bulk product waste only if the "concentration at the time of designation for disposal was ≥50 ppm"?

Response 2: No, all plastics are not considered as PCB bulk product waste. If the PCB concentration of the original manufactured product (i.e., plastic) was ≥50 ppm PCBs at the end of its useful life (i.e., concentration at the time of designation for disposal), then the plastic and the resulting shredder residue waste are PCB bulk product wastes, regardless of the PCB concentration after shredding.

Question 3: What does "concentration at the time of designation for disposal" mean? Is this based on TCLP?

Response 3: "Concentration at the time of designation for disposal" means the concentration of the PCBs in the manufactured product at the time it is determined that the product is a waste (i.e., the end of its useful life) and before it is mixed with other materials. PCB bulk product waste is generated at the point of disposal of manufactured products which contain PCBs at ≥50 ppm. If the concentration of PCBs in the manufactured product is ≥50 ppm at the time of designation for disposal, then the waste is a PCB bulk product waste. PCB bulk product waste which is sent to the shredder is already "designated for disposal" when it arrives at the shredder. Generation of shredder residue does not change the disposal status of the PCB bulk product waste present in the residue. The "50 ppm" measurement is a bulk measurement and is not based on the TCLP test.

Question 4: What is the significance of the "≥50 ppm" value? Is this just a threshold value for defining "PCB Bulk Product Waste," other than those specified (i.e., "PCB containing waste from shredding of automobiles, household appliances, or industrial appliances," "Plastics")?

Response 4: As with any other PCB waste, PCB bulk product waste is regulated for disposal based on the concentration of the material at the time of designation for disposal. EPA has not waived the anti-dilution provision at §761.1(b)(5) for the generation of shredder residue. If components of the shredder feed stream containing ≥50 ppm PCBs are shredded with components containing <50 ppm PCBs, then all of the shredder residue is PCB bulk product waste and is regulated for disposal in accordance with §761.62, regardless of the final concentration of the shredder residue. If no component of the shredder feed stream contains ≥50 ppm PCBs, then the shredder residue is not regulated for disposal under the TSCA PCB regulations. If you are unable to establish that the small PCB capacitors have been removed and the PCBs in the shredder residue came from a source other than ≥50 ppm feedstock, then your shredder residue is regulated as PCB bulk product waste.

Question 5: The definition of PCB bulk product waste also appears to encompass plastic vehicle parts or materials recovered by disassembly techniques-- not just shredder wastes? Is this a correct interpretation?

Response 5: Yes, the definition of PCB bulk product waste at §761.3 includes plastic vehicle parts. If the material that is recovered by disassembly techniques meets the definition of PCB bulk product waste, then it is also a PCB bulk product waste.

EPA Approval for Re-use in Commerce

Question 1: In terms of recovering recyclable materials for re-use from any source or waste that contains PCBs, the term "PCB bulk product waste" does not appear to have any significant meaning because TSCA bans PCBs from distribution in commerce. Therefore, re-use of such materials, whether extracted from a PCB bulk product waste, or from a PCB source material where the concentration of PCBs was less than 50 ppm would still require explicit authorization from the EPA. Is this correct?

Response 1: Yes, TSCA prohibits the manufacture, processing, distribution in commerce and use (or re-use) of PCBs, regardless of concentration, unless specifically authorized by EPA.

Question 2: With regard to an exemption which the EPA might grant--are these exemptions granted for a specific time period (e.g., one year) and do they have to be renewed annually, or can they be granted for the duration of a project (e.g., five to ten years)?

Response 2: An exemption under TSCA §6(e)(3)(B) is granted for a time period of one year. These exemptions must be renewed annually. There is no provision under TSCA to exceed the statutory limit of one year for an exemption. Please be advised, however, that these exemptions can only be granted for manufacturing, processing or distribution in commerce of PCBs. The use of PCBs cannot be authorized via an exemption. Rather, the use of PCBs can only be authorized via a rulemaking. Please see the attached letter to Ms. Tracy Mattson for a more detailed discussion.

Question 3: Who must apply for the exemption? For example, can Argonne, as a technology developer, apply for an exemption that would authorize the re-use of material (e.g., polyurethane foam) recovered from a specified waste stream (e.g., shredder residue) by our process? Would such an exemption be valid for users of our technology?

Response 3: As discussed in Response 2 above, exemptions under §6(e)(3)(B) of TSCA cannot be granted for use (or re-use). An authorization for the use (or re-use) of PCBs can only be granted via a rulemaking. Please see the attached letter to Ms. Tracy Mattson for a more detailed discussion.

R&D Use of PCBs

Question 1: The two R&D class exemptions for PCB use in R&D limit the annual quantity of PCBs to 500 grams. In the case of PCB waste, does the 500 grams apply to the contained PCBs?

For example, are the R&D exemptions such that the amount of shredder residue that might be tested to develop a recycling process is limited to 500 grams annually? Or, if the PCB content of the shredder residue were 25 ppm, could process research be conducted on up to 20,000 kg per year?

Response 1: The class exemptions you are referring to appear at §§761.80(e) and .80(i). The class exemption at §761.80(e) is for R&D facilities that manufacture PCBs for their own use in conducting R&D for the development of PCB disposal technologies. This 500 gram limit, as well as the class exemption, would not apply to Argonne National Laboratory. Argonne's work does not involve the development of PCB disposal technologies. On the other hand, the exemption at §761.80(i) covers the entire spectrum of activities (i.e., manufacture, including import; processing; and distribution in commerce, including export) for PCBs and analytical reference samples derived from PCB waste materials. EPA's intent in creating the provision at §761.80(i) was to streamline the regulatory process for entities that develop samples of minute amounts of PCBs. The 500 gram limit, and class exemption at §761.80(i), would not apply to Argonne National Laboratory's recycling process. Argonne's work does not involve the manufacture, processing or distribution in commerce of PCBs or analytical reference samples derived from PCB waste solely for the purpose of R&D. Also, to qualify for these (or any) exemptions, Argonne would have to submit an exemption petition that satisfies the criteria of TSCA section 6(e)(3)(B). Section 6(e)(3)(B)(i) requires the petitioner to demonstrate that an unreasonable risk of injury to health or the environment would not result from the requested exemption, and 6(e)(3)(B)(ii) requires the petitioner to expend good faith efforts to develop/find a substitute for the PCBs. Compliance with this requirement will be difficult since Argonne's efforts involve the use of PCB waste materials and other materials are available to make the products that you discussed with my staff.

In your letter, you also reference the meeting between EPA and Argonne on May 26, 1999. At this meeting, you provided information to the Agency on the recycling processes conducted at Argonne National Laboratory. We have reviewed this information. However, we are unable to provide more guidance regarding these processes until you provide us with data on the PCB concentrations at the various stages of the process. In a letter to Ms. Tracy Mattson of the Institute of Scrap Recycling Industries, Inc. we discussed in detail the type of data we would need as well as what we plan to do with that data. A copy of this letter was sent to you. For your convenience, another copy has been attached.

We are providing these responses as a result of your written inquiry regarding the applicability of TSCA and the PCB Disposal Amendments to shredder residue. However, you should be aware that continued efforts to process shredder residue without a TSCA section (6)(e)(3)(B) exemption for processing is not authorized and therefore is not in compliance with §(6)(e) of TSCA.

If you have any further questions, please contact Ms. Sara McGurk at (202) 260-1107.

Sincerely,

John W. Melone, Director
National Program Chemicals Division

Enclosure

cc: S. Friedrich/DOE
B. Jody/ANL
J. Karvelas/ANL

ARGONNE NATIONAL LABORATORY
9700 South Cass Avenue, Argonne, Illinois 60439
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July 7, 1999

Ms. Sara McGurk
Chemist
Environmental Protection Agency
7404
USEPA Headquarters
401 M Street, S.W.
Washington, DC 20460

Subject: Questions for Clarification of Disposal of Polychlorinated Biphenyls (PCBs), EPA Final Rule 40 CFR Parts 750 and 761, Effective Date of August 28, 1998
Reference: E.J. Daniels/Argonne Memo dated June 22, 1999

Dear Sara:

Thanks again for arranging the meeting between Argonne and EPA regarding the subject regulation. As a result of the meeting and further review of the Final Rule, I have a number of questions for your consideration. I plan to be in Washington during the week of July 20th. Perhaps if you have some time then, we can talk further about these issues.

With regard to the information that we presented at the meeting on the processes to recover ABS and flexible polyurethane foam, we welcome any recommendations or guidance that you might have, and would appreciate it if you would let us know when you might complete your review of the information.

With regard to the questions that I have about the Final Rule, you should know that our interest goes beyond the two processes that we discussed at our June 1 meeting. We are also working on other processes to recover specific thermoplastics (such as PVC, polyethylene, polypropylene, nylon, and polycarbonate) from shredder residue, to recover plastics from consumer electronics (e.g. computers), to recover plastics from disassembled vehicle components prior to conventional shredding, and to recover plastics and other recyclables from Department of Defense surplus equipment.

Additional questions regarding the Final Rule relate to 1) the definition of the term "PCB Bulk Product Waste", 2) clarification of the need for EPA approval to re-use materials recovered from PCB wastes, and 3) use of PCB waste for process research and development.

1) **PCB Bulk Product Waste:**

> "PCB Bulk Product Waste" is defined as "waste derived from manufactured products containing PCBs...at any concentration where the concentration at the time of designation for disposal was ≥ 50 ppm PCBs..." and then goes on to state that "PCB bulk product waste includes...(2) PCB containing waste from the shredding of automobiles...(3) Plastics..."

Does this mean that *all* shredder residue waste is considered as bulk product waste regardless of the PCB concentration (presumably because of past experience such as the Office of Solid Waste Research that showed the extreme variability of PCB measurement in shredder residue) or is it considered bulk product waste only if the "concentration at the time of designation for disposal was ≥ 50 ppm"?

Does this mean that *all* plastics are considered as bulk product waste regardless of the PCB concentration or are they considered bulk product waste only if the "concentration at the time of designation for disposal was ≥ 50 ppm"?

What does "concentration at the time of designation for disposal" mean? Is this based on TCLP?

What is the significance of the "≥ 50 ppm" value? Is this just a threshold value for defining "PCB Bulk Product Waste," other than those specified (i.e. "PCB containing waste from shredding of automobiles, household appliances, or industrial appliances", "Plastics")?

The definition of PCB bulk product waste also appears to encompass plastic vehicle parts or materials recovered by disassembly techniques- not just shredder wastes? Is this a correct interpretation?

2) **EPA Approval for Re-use in Commerce:**

In terms of recovering recyclable materials for re-use from any source or waste that contains PCBs, the term "PCB bulk Product Waste" does not appear to have any significant meaning because TSCA bans PCBs from distribution in commerce. Therefore, re-use of such materials, whether extracted from a PCB bulk product waste, or from a PCB source material where the concentration of PCBs was less than 50ppm would still require explicit authorization from the EPA. Is this correct?

With regard to an exemption which the EPA might grant- are these exemptions granted for a specific time period (e.g. one year) and do they have to be renewed annually, or can they be granted for the duration of a project (e.g. five to ten years)?

Who must apply for the exemption? For example, can Argonne, as a technology developer, apply for an exemption that would authorize the re-use of material (e.g. polyurethane foam) recovered from a specified waste stream (e.g. shredder residue) by our process? Would such an exemption be valid for users of our technology?

3) R&D Use of PCBs:

The two R&D class exemptions for PCB use in R&D limit the annual quantity of PCBs to 500 grams. In the case of PCB waste, does the 500 grams apply to the contained PCBs? For example, are the R&D exemptions such that the amount of shredder residue that might be tested to develop a recycling process is limited to 500 grams annually? Or, if the PCB content of the shredder residue were 25 ppm, could process research be conducted on up to 20,000 kg per year?

I will contact you next week to see if there is a convenient time during the week of July 20th when you may have the time to discuss these questions.

Thanks for your help.

Sincerely,

Edward J. Daniels
Section Manager, Process Evaluation
Energy Systems Division
Argonne National Laboratory

ED:mn

cc: S. Friedrich/DOE
B. Jody/ANL
J. Karvelas/ANL

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUL 28 1999

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Edward Daniels
Section Manager, Process Evaluation
Energy Systems Division
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residue is the result of shredding materials that were manufactured with PCBs ≥50 ppm, then the shredder residue is a PCB bulk product waste, regardless of its PCB concentration after shredding.

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Response 5: Yes, the definition of PCB bulk product waste at §761.3 includes plastic vehicle parts. If the material that is recovered by disassembly techniques meets the definition of PCB bulk product waste, then it is also a PCB bulk product waste.

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Response 2: An exemption under TSCA §6(e)(3)(B) is granted for a time period of one year. These exemptions must be renewed annually. There is no provision under TSCA to exceed the statutory limit of one year for an exemption. Please be advised, however, that these exemptions can only be granted for manufacturing, processing or distribution in commerce of PCBs. The use of PCBs cannot be authorized via an exemption. Rather, the use of PCBs can only be authorized via a rulemaking. Please see the attached letter to Ms. Tracy Mattson for a more detailed discussion.

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R&D Use of PCBs

Question 1: The two R&D class exemptions for PCB use in R&D limit the annual quantity of PCBs to 500 grams. In the case of PCB waste, does the 500 grams apply to the contained PCBs? For example, are the R&D exemptions such that the amount of shredder residue that might be tested to develop a recycling process is limited to 500 grams annually? Or, if the PCB content of the shredder residue were 25 ppm, could process research be conducted on up to 20,000 kg per year?

Response 1: The class exemptions you are referring to appear at §§761.80(e) and .80(i). The class exemption at §761.80(e) is for R&D facilities that manufacture PCBs for their own use in conducting R&D for the development of PCB disposal technologies. This 500 gram limit, as well as the class exemption, would not apply to Argonne National Laboratory. Argonne's work does not involve the development of PCB disposal technologies. On the other hand, the exemption at §761.80(i) covers the entire spectrum of activities (i.e., manufacture, including import; processing; and distribution in commerce, including export) for PCBs and analytical reference samples derived from PCB waste materials. EPA's intent in creating the provision at §761.80(i) was to streamline the regulatory process for entities that develop samples of minute amounts of PCBs. The 500 gram limit, and class exemption at §761.80(i), would not apply to Argonne National Laboratory's recycling process. Argonne's work does not involve the manufacture, processing or distribution in commerce of PCBs or analytical reference samples derived from PCB waste solely for the purpose of R&D. Also, to qualify for these (or any) exemptions, Argonne would have to submit an exemption petition that satisfies the criteria of TSCA section 6(e)(3)(B). Section 6(e)(3)(B)(i) requires the petitioner to demonstrate that an unreasonable risk of injury to health or the environment would not result from the requested exemption, and 6(e)(3)(B)(ii) requires the petitioner to expend good faith efforts to develop/find a substitute for the PCBs. Compliance with this requirement will be difficult since Argonne's efforts involve the use of PCB waste materials and other materials are available to make the products that you discussed with my staff.

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§(6)(e) of TSCA.

If you have any further questions, please contact Ms. Sara McGurk at (202) 260-1107.

Sincerely,

John W. Melone, Director
National Program Chemicals Division

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cc: S. Friedrich/DOE
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