Compilation of Comments on the draft guidelines on BAT and guidance on BEP received by the Secretariat of the Stockholm Convention

Comments submitted by Governments

COMMENTS SUBMITTED BY BRAZIL

MINISTÉRIO DO MEIO AMBIENTE

SECRETARIA DE QUALIDADE AMBIENTAL NOS ASSENTAMENTOS HUMANOS

Esplanada dos Ministérios, Bloco B, 8º andar

Oficio n.º 393 /2004/SQA/GABIN

Brasília, 18 June 2004

Sir
JAMES B. WILLIS
Executive Secretary
Stockholm Convention
United Nations Environment Programme
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UNEP Chemicals
Date Received: 18.6.04
File no / Ref.: 393
For action: JW → DC
Cc:

Subject: **Invitation to provide comments on draft guidelines on best available techniches and guidance on best environmental practices relevant to Article 5 and Annex C of the Stockholm Convention.**

Dear Secretary,

1. In reference to the request about comments on the draft guidelines on best available techniques and the guidance on best environmental practices relevant to Article 5 in the Annex C of the Stockholm Convention, we have to inform you the following.

2. Primarily, we would like to congratulate the Secretariat for the excellent work done by the expert group. It represents an advanced available guide for the prevention and controlling the sources categories.

3. Our main concerns are related to the real economical and technical feasibility of the technologies change for so many source categories. From our point of view, this profile will be known only after the national inventory of each source category.

4. About the motor vehicles draft, the dioxine/furane emission factors should present more recent measurements, considering that most of the nations have already implemented air pollution control programs.

5. About the medical waste incinerators, we suggest to emphasize the local segregation of the waste in order to obtain a more detailed classification for each medical waste and its respective treatment.

6. We would like to comment, in a developing country point of view, that the investment and operational costs were not satisfactory included in the draft. We suggest that these costs should be considered when the best available techniques and the best environmental practices are presented. This, each part would be even more able to evaluate the best suitable change or substitution for a parts reality.

Best regards,

RUY DE GÓES LEITE DE BARROS
Secretary for the
Office of Environmental Quality in Human Settlements
Acting

COMMENTS SUBMITTED BY CHINA

中华人民共和国国家环境保护总局[传真]

STATEMENT ENVIRONMENTAL PROTECTION ADMINISTRATION
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FACSIMILE TRANSMISSION COVER FORM

TO: Interim Secretariat for the Stockholm Convention
UNEP Chemicals

ATTENTION: James B. Willis
Executive Secretary

FAX NO.: 41 22 797 34 60

COUNTRY: Geneva, Switzerland

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DEPT: Dept. of International Cooperation (DIC)

DATE: 14 June, 2004

APPROVED BY: Mr. Yue Ruisheng
Deputy Director General, DIC

NO. OF PAGES: 7

(NOTE: IF NOT RECEIVED CLEARLY, PLEASE CALL (86-10) 6615-5639 OR 6615-1933

Subject: Comments and Recommendations on the Draft Guidance on BAT/BEP

Dear Mr. Willis,

I am writing in reference to your letter dated April 16, 2004 inviting comments on the Draft Guidance on BAT/BEP, which was compiled by UNEP Chemicals.

As suggested in your letter, we downloaded the Draft Guidance from the Stockholm Convention web page as updated on Apr 21, 2004. We have noticed that because some of the guidelines, especially section I.C "How to use the guidelines and guidance", section III. "General guidance relevant to BEP" and section IV. "General guidance relevant to BAT", are yet to be developed, the concrete utility of guidelines remains undefined. In accordance with this situation, China has come up with some preliminary comments and recommendations on the draft guideline documents as publicised on the web page so far from the perspective of technical and economic feasibility. Please find attached comments and recommendations from China for further modification and improvement of the documents.

We are willing to provide further comments when all the guideline documents are worked out.

Best regards,

Sincerely yours,

Yue Ruisheng
Deputy Director General
Department of International Cooperation
State Environmental Protection Administration

14.6.04
BAT/BEP

Comments and Recommendation of the People's Republic of China on "Draft guidelines on best available techniques and guidance on best environmental practices relevant to Article 5 and Annex C of the Stockholm Convention on Persistent Organic Pollutants"

The control of unintentionally produced POPs has a more profound and more extensive influence than that of other POPs. Noticing that the BAT/BEP guidelines are of great significance to the reduction of unintentionally produced POPs and the protection of the environment and human health and the sustainable development of social economy, China fully recognises the necessity for UNEP Chemicals to organise the compilation of "Draft guidelines on best available techniques and guidance on best environmental practices relevant to Article 5 and Annex C of the Stockholm Convention on Persistent Organic Pollutants".

The best available techniques promoted by the Convention are not technical regulations for any specific techniques, but recommendations that prior consideration should be given to the technical characteristics, geographic locations and environmental conditions for the installation of relevant equipment. China believes that the current guidelines on BAT/BEP have taken into account the specific technical characteristics and practical situations of developing countries and countries with economies in transition. The technical measures and requirements for the

reduction of unintentionally produced POPs are in consistency with the existing environmental technology requirements of China, such as the technical requirements for prohibiting the production and use of leaded gasoline, open incineration and the incineration of copper cable at low temperature, gradual phase-out of the production of chlorine from alkali salts or brine utilizing graphite anodes.

We have furthermore noticed that only when the following factors have been taken into full consideration during the revision and implementation of the guidelines, can developing countries and countries with economics in transition be expected to overcome the technical and economic difficulties and promote the BAT/BEP guidelines in accordance with the requirements of the Convention:

1. Conduct cost analysis of adopting the BAT/BEP techniques recommended in the guidelines. Undoubtedly BAT/BEP will lead to an increase in the cost. First of all, the investment cost will increase in that the BAT/BEP requirement for new sources calls for new equipment to reduce the discharge of unintentionally produced POPs, and for existing sources, the reduction of discharge also require new controlling devices. In addition, the cost for operation management and monitoring will rise as well. We hope the guidelines could analyse the cost/incremental cost during the construction and operation

processes so that each country could select practical BAT/BEP techniques in accordance with its individual characteristics and available financial aids. In the meanwhile, the funding mechanism of the convention could analyse and predict the fundamental financial requirement of each country to reduce the discharge of unintentionally produced POPs so as to purposefully identify the objects to increase the investment. Only the V.A section of the current document, concerning the guidelines on such emission sources as incineration of municipal solid waste, hazardous waste and activated sludge have included such preliminary estimations.

2. The carrying-out of emission control standards should be divided into several phases. The current guidelines have developed propositional emission control standards for sources listed in part 2 of annex C. With the consideration of the current technical and economic levels of developing counties and economically transforming countries and the feasibility for the funding mechanism of the convention to provide the funds, we suggest that the objective for emission control should be achieved by stages to facilitate the maneuverability of the guidelines in developing countries and economically transforming countries. For instance, at present China only has control standards on

atmospheric emission of dioxin for municipal waste and hazardous waste incineration. And there is no information on emission in other industries, to say nothing of control standards, which calls for a period of time to demonstrate and gradually promote the BAT/BEP techniques in accordance with Chinese characteristics.

3. We suggest that the guidelines thoroughly verify the relations between the adoption of recommended BAT/BEP techniques and the achievement of recommended emission standards so that each country could select the most cost-effective BAT/BEP measures to achieve its goal of controlling the emission.
4. We suggest that the guidelines provide more detailed introduction to the mechanism and condition for the formation of unintentionally produced POPs for all sources.
5. We suggest that the guideline take into account the control of other pollutants while recommending the BAT. Although most techniques to control unintentionally produced POPs could deal with two or more pollutants, a few of them address unintentionally produced POPs only. For example, in the chemical industry processes, although sulphuric acid method could be used to replace chlorination method in the production of titanium white to cut down PCDDs/PCDFs, this method will

generate a huge amount of waste residue and acid waste water. Therefore the recommendation of best available techniques in the guidelines should be conducted with the integral consideration of its influence to the society, the economy, the environment, human health and the like.

6. We suggest that the guidelines establish effective and available approaches for effective techniques. Since many techniques mentioned in the guidelines are now still unavailable to developing countries and economically transforming countries, we should establish effective technical aid approaches for the implementation of these techniques.

7. We suggest that the guidelines fully consider the incremental cost of developing countries and economically transforming countries owing to the adoption of BAT/BEP techniques. Although at present it is still difficult to estimate the incremental cost of the emission reduction of unintentionally produced POPs for China because of undefined basic data, we can well reach the prediction that the incremental cost is far from affordable for China, and thus we need aids and support from the funding mechanism of the convention. Therefore, we hope that the establishment and implementation of controlling objectives in the guidelines should be consistent with the plan of the funding

mechanism of the convention..

In addition, since China has abundant sources of unintentionally produced POPs and unique emission techniques, we suggest the country be invited to dispatch its observer to participate the 3rd expert group meeting.

The above suggestions are provided as reference to revise and consummate the BAT/BEP guidelines as well as further implement them.

COMMENTS SUBMITTED BY COLOMBIA

COMENTARIOS DE COLOMBIA

DRAFT GUIDELINES BAT/BEP

Section V.A.I: Guidance by source category, Annex C, Part II Source Categories –Waste Incinerators (DRAFT 19/04/04): Municipal and hazardous waste and sewage sludge – Coordinated by Mr. Robert Kellam (United States of America)

Colombia está de acuerdo con las mejores técnicas disponibles y las mejores prácticas medioambientales de esta guía, sin embargo, es importante señalar que Colombia no puede sostener económicamente incineradores giratorios dedicados exclusivamente para desechos peligrosos. Por lo anterior, el país ha desarrollado algunas pruebas de coprocesamiento de residuos peligrosos en la producción de cemento con desechos como plásticos y tierras contaminados con plaguicidas y llantas usadas, en hornos giratorios de plantas cementeras colombianas cumpliendo todos los valores limites hasta las Dioxinas/Furanos y PCBs de USEPA y de UE.

De otra parte, se propone las siguientes medidas para la minimización de liberaciones de Dioxinas y Furanos en esta categoría:

Las estrategias al principio se deben concentrar en las fuentes más generadoras de PCDD/PCDF con el lanzamiento de nuevas y modernas tecnologías de producción, producción más limpia y modernos sistemas de control de polución de emisiones.

Se proponen las siguientes medidas acerca de procesos industriales liberadores de PCDD/PCDF, con el fin de reducir las liberaciones de dioxinas y furanos:

- Conocer los mecanismos de formación de PCDD/PCDF profundamente en las plantas industriales de esta categoría. Experimentalmente se puede demostrar p.ej en caso de los procesos de combustión que

- No solo la combustión directa produce PCDD/PCDF

- En la zona de enfriamiento de los gases, como precipitadores electrostáticos, se produce casi 10 veces más PCDD/PCDF.

- Los filtros de mangas son mejores que los precipitadores electrostáticos, ya que la temperatura de trabajo puede ser <200°C ó 150°C. Por lo tanto se debe aplicar las mejores técnicas disponibles (BAT). En caso de uso de los precipitadores electroestáticos (ESP) se debe siempre utilizar precipitadores electroestáticos fríos (c-ESP) y jamás precipitadores electroestáticos calientes (h-ESP), en donde "c-" significa la temperatura de trabajo del equipo de <220°C/150°C y "h-" de > 220°C/150°C

- El mismo equipo de control de polución de aire a la temperatura de trabajo de >300°C podría emitir cerca 0,3 ng I-TEQ/Nm^3 y a la temperatura de trabajo de <200°C < = 0,1 ng I-TEQ/Nm^3 .

- Un enfriamiento de choques de los gases de salida por debajo de 200°C reduce la generación de PCDD/PCDF.

- Las dioxinas y furanos pueden ser oxidadas a alta temperatura de 800—1200°C ó en un catalizador a temperatura baja.

- Las dioxinas y furanos después del filtro de mangas pueden ser reducidas de <0,05 ng/m^3 a < 0,01 ng/m^3 a través de SCR-—DeDiox catalizador .

- Las superficies activas de catalizadores metálicos (Cu, Fe, Ni, Si etc.) en la ceniza volante generando PCDD/PCDF pueden ser bloqueados mediante NH_3, H_2S ó Aminas.

- La ceniza volante impregnada con destructores inorgánicos no volátiles puede reducir 99,99% la concentración generada a la temperatura de 200—400°C por los precursores potenciales indicando que los destructores están envenenando las superficies activas de las cenizas volantes.

- Desalienta la incineración de desechos sólidos municipales sus inmensos volúmenes y por consiguiente su significativo potencial de dar lugar a la liberación de PCDD/PCDF

Se debe animar la aplicación de las mejores tecnologías disponibles (BAT) y las mejores prácticas medioambientales (BEP) en los procesos de incineración de desechos municipales, peligrosos y lodos de tratamiento de aguas residuales de químicos orgánicos e inorgánicos utilizando filtros de mangas junto con un catalizador a descomponer los PCDD/PCDF ó la combinación de filtro de mangas con inyector de sorbente seco (como carbón activo etc.) cumpliendo el valor limite internacional en emisión al aire de 0.1 ng I-TEQ/Nm^3 de PCDD/PCDF.

Como un mejor indicador de medidas de mitigación de PCDD/PCDF se debe adecuar y actualizar sucesivamente el inventario básico con base en los datos más precisos y factores de emisión, experimentales de ser posible, más específicos y ajustados a la situación real de cada país, dando una base sustentada para aplicar "National Implementation Plan—NIP" adecuadamente.

Además se debe fijar los valores límites de PCDD/PCDF en los residuos/lodos de scrubber/suelos, en el vector agua como el valor existente en el vector aire de 0.1 ng I-TEQ/Nm^3. De esta manera se muestra el cumplimiento de los estándares del desempeño (Performance Standards) y del desempeño de reportaje (Performance Reporting).

Section V.B.: Guidance by source category, Annex C, Part II Source Categories –Cement kilns firing hazardous waste (Draft 15/04/04) –Coordinated by Ms. Ute Karl (Germany) and Ms. Steffi Richter (Germany)

Colombia está de acuerdo con las mejores técnicas disponibles (Best Available Techniques --BAT) y las mejores prácticas medioambientales (Best Environmental Practices--BEP) que esta guía propone para el co - procesamiento de desechos peligrosos in-situ en la producción de cemento.

Además, de lo expuesto por la guía Colombia propone las siguientes medidas para la minimización de liberaciones de Dioxinas y Furanos:

Las estrategias al principio se deben concentrar en los desechos peligrosos más generadores de PCDD/PCDF con el lanzamiento de nuevas y modernas tecnologías de producción--- producción más limpia—y de modernos sistemas de control de polución de emisiones.

Se propone lo siguiente acerca de procesos industriales liberadores de PCDD/PCDF, con el fin de reducir las liberaciones de dioxinas y furanos:

- Conocer los mecanismos de formación de PCDD/PCDF profundamente en las plantas industriales de esta categoría. Experimentalmente se puede demostrar p.ej en caso de los procesos de combustión que

- No solo la combustión directa produce PCDD/PCDF

- En la zona de enfriamiento de los gases, como precipitadores electrostáticos, se produce casi 10 veces más PCDD/PCDF.

- Los filtros de mangas son mejores que los precipitadores electrostático, ya que la temperatura de trabajo puede ser < 200°C ó 150°C. Por lo tanto se debe aplicar las mejores técnicas disponibles (BAT). En caso de uso de los precipitadores electroestáticos (ESP) se debe siempre utilizar precipitadores electroestáticos fríos (c-ESP) y jamás precipitadores electroestáticos calientes (h-ESP), en donde "c-" significa la temperatura de trabajo del equipo de <220°C/150°C y "h-" de > 220°C/150°C

- El mismo equipo de control de polución de aire a la temperatura de trabajo de >300°C podría emitir cerca 0,3 ng I-TEQ/Nm^3 de PCDD/PCDF y a la temperatura de trabajo de < 200°C < = 0,1 ng I-TEQ/Nm^3.

- Un enfriamiento de choques de los gases de salida por debajo de 200°C reduce la generación de PCDD/PCDF. Se logra este enfriando Clinker a la temperatura <200°C.

- Las dioxinas y furanos pueden ser oxidadas a alta temperatura de 800—1200°C ó en un catalizador a temperatura baja.

- Las dioxinas y furanos después del filtro de mangas pueden ser reducidas de <0,05 ng/m^3 a < 0,01 ng/m^3 a través de SCR-—DeDiox catalizador .

- Las superficies activas de catalizadores metálicos (Cu, Fe, Ni, Si etc.) en la ceniza volante generando PCDD/PCDF pueden ser bloqueados mediante NH_3, H_2S ó Aminas.

- La ceniza volante impregnada con destructores inorgánicos no volátiles puede reducir 99,99% la concentración generada a la temperatura de 200—400°C por los precursores potenciales indicando que los destructoresestán envenenando las superficies activas de las cenizas volantes.

Se debe animar la aplicación de las mejores tecnologías disponibles (BAT) y las mejores prácticas medioambientales (BEP) en los procesos del co-procesamiento de desechos peligrosos en la producción de cemento, utilizando filtro de mangas junto con un catalizador a descomponer los PCDD/PCDF ó la combinación de filtro de mangas con inyector de sorbente seco (como carbón activo etc.) cumpliendo el valor limite internacional en emisión al aire de 0.1 ng I-TEQ/Nm^3 de PCDD/PCDF

Como un mejor indicador de medidas de mitigación de PCDD/PCDF se debe adecuar y actualizar sucesivamente el inventario básico con base en los datos más precisos y factores de emisión – experimentales de ser posible--más específicos y ajustados a la situación real del país, dando una base sustentada para aplicar "National Implementation Plan—NIP" adecuadamente.

Además se debe fijar los valores límites de PCDD/PCDF en Clinker /Particulas Suspendidas Totales PST/lodos de scrubber y en vector agua (en caso se utiliza Scrubber) como el valor existente en el vector aire de 0.1 ng I-TEQ/Nm^3. De esta manera se muestra el cumplimiento de los estándares del desempeño (Performance Standards) y del desempeño de reportaje (Performance Reporting).

Section V.C.: Guidance by source category, Annex C, Part II Source Categories–Production of pulp using elemental chlorine or chemicals generating elemental chlorine for bleaching (DRAFT15/04/04)–Coordinated by Ms. Hille Hyytiä (Finland)

Colombia está de acuerdo con las mejores técnicas disponibles (Best Available Techniques --BAT) y las mejores prácticas medioambientales (Best Environmental Practices--BEP) de esta guía para la producción de pasta utilizando cloro ó químicos que generan cloro para blanqueado con meta de desligninificación.

Además, se propone las siguientes medidas para la minimización de liberaciones de Dioxinas y Furanos en esta categoría:

- Las estrategias al principio se debe concentrar en los procesos industriales más generadores de PCDD/PCDF con el lanzamiento de nuevas y modernas tecnologías de producción---producción más limpia—y de modernos sistemas de control de polución de emisiones.

Se propone las siguientes medidas acerca de procesos industriales liberadores de 2378-TCDD/TCDF, con el fin de reducir estas liberaciones, tomando en cuenta en primer lugar la realidad del país en cuanto a su tecnología vieja:

- Conocer profundamente los mecanismos de formación de 2378-TCDD/TCDF en las plantas industriales de esta categoría. Experimentalmente se puede demostrar que evitando la presencia de PCDD/PCDF precursores como inclorados DBD (Dibenzo-p-dioxin) y DBF (Dibenzofuran) en las formulaciones de ciertos "Defoamers" utilizados mientras del blanqueado con cloro en la industria de producción de pasta y papel se puede eliminar la generación de 2378-TCDD/TCDF en la "C-stage" del proceso.

- En la producción de pasta Kraft blanqueada se debe recuperar las fibras en las distintas etapas así evitando la generación de lodos durante el tratamiento de efluentes.

- No solo la liberación al aire de PCDD/PCDF a través del quemado del licor negro en el ciclo de recuperación a generar energía y recuperar químicos inorgánicos de proceso, aunque evitando la liberación de cenizas.

- En la zona de enfriamiento de los gases, como precipitadores electrostáticos, se produce casi 10 veces más PCDD/PCDF.

- Los filtros de mangas son mejores que los precipitadores electrostáticos, ya que la temperatura de trabajo puede ser < 200°C ó 150°C. Por lo tanto se debe aplicar las mejores técnicas disponibles (BAT). En caso de uso de los precipitadores electrostáticos (ESP) se debe siempre utilizar precipitadores electrostáticos fríos (c-ESP) y jamás precipitadores electrostáticos calientes (h-ESP), en donde "c-" significa la temperatura de trabajo del equipo de < 220°C/150°C y "h-" de > 220°C/150°C. Se recomienda la utilización de filtro de mangas.

- El mismo equipo de control de polución de aire a la temperatura de trabajo de > 300°C podría emitir cerca 0,3 ng I-TEQ/Nm^3 y a la temperatura de trabajo de < 200°C < = 0,1 ng I-TEQ/Nm^3.

- Un enfriamiento de choque de los gases de salida por debajo de 200°Creduce la generación de PCDD/PCDF.

- Las dioxinas y furanos pueden ser oxidadas a alta temperatura de 800—1200°C ó en un catalizador a temperatura baja.

- Las dioxinas y furanos después del filtro de mangas pueden ser reducidas de < 0,05 ng/m^3 a < 0,01 ng/m^3 a través de SCR-—DeDiox catalizador.

- Las superficies activas de catalizadores metálicos (Cu, Fe, Ni, Si etc.) en la ceniza volante generando PCDD/PCDF pueden ser bloqueados mediante NH_3, H_2S ó Aminas.

- La ceniza volante impregnada con destructores inorgánicos no volátiles puede reducir 99,99% la concentración generada a la temperatura de 200—400°C por los precursores potenciales indicando que los destructores están envenenando las superficies activas de las cenizas volantes.

Se debe animar la aplicación de las mejores tecnologías disponibles (BAT) y las mejores prácticas medioambientales (BEP) en proceso del quemado del material orgánico en el ciclo de recuperación a generar energía y recuperar químicos inorgánicos de proceso, utilizando filtro de mangas junto con un catalizador a descomponer los PCDD/PCDF ó la combinación de filtro de mangas con inyector de sorbente seco (como carbón activo etc.) cumpliendo el valor limite internacional en emisión al aire de 0.1 ng I-TEQ/Nm^3 de PCDD/PCDF.

Como un mejor indicador de medidas de mitigación de PCDD/PCDF se debe adecuar y actualizar sucesivamente el inventario básico con base en los datos más precisos y factores de emisión, experimentales de ser posible, más específicos y ajustados a la situación real de cada país, dando una base sustentada para aplicar el "National Implementation Plan—NIP" adecuadamente.

Además se deben fijar los valores límites de PCDD/PCDF en Productos/Residuos/Particulas Suspendidas Totales PST/lodos de scrubber y en vector agua (en caso se utiliza Scrubber) como el valor existente en el vector aire de 0.1 ng I-TEQ/Nm^3. De esta manera se muestra el cumplimiento de los estándares del desempeño (Performance Standards) y del desempeño de reportaje (Performance Reporting).

Section V.D.2: Guidance by source category, Annex C, Part II Source Categories –Sinter plants in the iron industry (DRAFT 22/04/04) –Coordinated by Mr. Patrick Finlay (Canada)

Colombia está de acuerdo con las mejores técnicas disponibles (Best Available Techniques --BAT) y las mejores prácticas medioambientales (Best Environmental Practices--BEP) de esta guía para las plantas de sinterización en la industria de hierro.

Además Colombia propone las siguientes medidas para la minimización de liberaciones de Dioxinas y Furanos en esta categoría:

- Las estrategias al principio se deben concentrar en procesos industriales más generadoras de PCDD/PCDF con el lanzamiento de nuevas y modernas tecnologías de producción, producción más limpia, y de modernos sistemas de control de polución de emisiones.

Se propone las siguientes medidas acerca de procesos industriales liberadores de PCDD/PCDF, con el fin de reducir las liberaciones de dioxinas y furanos, tomando en cuenta en primer lugar la realidad del país en cuanto a su tecnología vieja:

- Conocer los mecanismos de formación de PCDD/PCDF profundamente en las plantas industriales de esta categoría. Experimentalmente se puede demostrar p.e., en caso del proceso de sinterización que:

- No solo el proceso de sinterización produce PCDD/PCDF

- En la zona de enfriamiento de los gases, como precipitadores electrostáticos, se produce casi 10 veces más PCDD/PCDF.

- Los filtros de mangas son mejores que los precipitadores electrostáticos, ya que la temperatura de trabajo puede ser < 200°C ó 150°C. Por lo tanto se debe aplicar las mejores técnicas disponibles (BAT). En caso de uso de los precipitadores electroestáticos (ESP) se debe siempre utilizar precipitadores electroestáticos fríos (c-ESP) y jamás precipitadores electroestáticos calientes (h-ESP), en donde "c-" significa la temperatura de trabajo del equipo de <220°C/150°C y "h-" de >220°C/150°C. Se recomienda la utilización de filtro de mangas.

- El mismo equipo de control de polución de aire a la temperatura de trabajo de >300°C podría emitir cerca 0,3 ng I-TEQ/Nm^3 y a la temperatura de trabajo de < 200°C < = 0,1 ng I-TEQ/Nm^3.

- Un enfriamiento de choques de los gases de salida por debajo de 200°Creduce la generación de PCDD/PCDF.

- Las dioxinas y furanos pueden ser oxidadas a alta temperatura de 800—1200°C ó en un catalizador a temperatura baja.

- Las dioxinas y furanos después del filtro de mangas pueden ser reducidas de <0,05 ng/m^3 a <0,01 ng/m^3 a través de SCR-—DeDiox catalizador.

- Las superficies activas de catalizadores metálicos (Cu, Fe, Ni, Si etc.) en la ceniza volante generando PCDD/PCDF pueden ser bloqueados mediante NH_3, H_2S ó Aminas.

- La ceniza volante impregnada con destructores inorgánicos no volátiles puede reducir 99,99% la concentración generada a la temperatura de 200—400°C por los precursores potenciales indicando que los destructoresestán envenenando las superficies activas de las cenizas volantes.

Se debe animar la aplicación de las mejores tecnologías disponibles (BAT) y las mejores prácticas medioambientales (BEP) en las plantas de sinterización en la industria de hierro utilizando filtro de mangas junto con un catalizador a descomponer los PCDD/PCDF ó la combinación de filtro de mangas con inyector de sorbente seco (como carbón activo etc.) cumpliendo el valor limite internacional en emisión al aire de 0.1 ng I-TEQ/Nm^3 de PCDD/PCDF

Como un mejor indicador de medidas de mitigación de PCDD/PCDF se debe adecuar y actualizar sucesivamente el inventario básico con base en los datos más precisos y factores de emisión – experimentales de ser posible--más específicos y ajustados a la situación real de cada país, dando una base sustentada para aplicar "National Implementation Plan—NIP" adecuadamente.

Además se deben fijar los valores límites de PCDD/PCDF en Residuos /Particulas Suspendidas Totales PST/lodos de scrubber y en vector agua (en caso se utiliza Scrubber) como el valor existente en el vector aire de 0.1 ng I-TEQ/Nm^3. De esta manera se muestra el cumplimiento de los estándares del desempeño (Performance Standards) y del desempeño de reportaje (Performance Reporting).

Section VI.A: Guidance by source category, Annex C, Part III Source Categories –Open burning of wastes (DRAFT 13/04/04)–Coordinated by Mr. Francis Kihumba (Kenya) and Mr. William Carroll (international Council of Chemical Associations)

Colombia está de acuerdo con las mejores técnicas disponibles (Best Available Techniques --BAT) y las mejores prácticas medioambientales (Best Environmental Practices--BEP) que esta guía propone.

Además se propone las siguientes medidas para la minimización de liberaciones de Dioxinas y Furanos en esta categoría:

- Las estrategias al principio se deben concentrar en las fuentes más generadoras de PCDD/PCDF con el lanzamiento de nuevas y modernas tecnologías de producción---producción más limpia—y de modernos sistemas de control de polución de emisiones.

Se proponen las siguientes medidas acerca de las quemas abiertas con el fin de reducir las liberaciones de dioxinas y furanos, tomando en cuenta en primer lugar la realidad del país en cuanto a su tecnología vieja:

1. Conocer profundamente los mecanismos de formación de PCDD/PCDF de esta categoría de desechos de quemas a cielo abierto.

- Las quemas a cielo abierto liberan PCDD/PCDF, HCB, PCBs, HAPs, PST, Benceno y CO. Según el Decreto 948/95 de Colombia, se prohiben este tipo de quemas; sin embargo, por falta del seguimiento de las autoridades ambientales se siguen realizando quemas a cielo abierto. Las quemas a cielo abierto son una mala practica.
  Por lo tanto y de acuerdo con lo planteado por la guía, el enfoque de la implementación del Convenio de Estocolmo debe ser el de buscar alternativas a las quemas abiertas y no el de ensayar mejorar una mala práctica.

2. Prevenir los quemados incontrolados abiertos al cielo de residuos agrícolas (cáscara de arroz, bagazo de caña etc.), para la reclamación térmica de cobre de alambre (quemas abiertas) y de desechos sólidos municipales. Cáscara de arroz p.ej. se puede utilizar en la producción de papel,

su procesamiento al "charcoal vineger" como pesticidas naturales evitando la dependencia de los pesticidas con base en química y además como materiales para "Mulching and soil amendment for organic farming".

Se debe animar la aplicación de las mejores tecnologías disponibles (BAT) y las mejores prácticas medioambientales (BEP) para el quemado y no permitir quemas a cielo abierto.

Como un mejor indicador de medidas de mitigación de PCDD/PCDF se debe adecuar y actualizar sucesivamente el inventario básico con base en los datos más precisos y factores de emisión – experimentales de ser posible--más específicos y ajustados a la situación real de cada país, dando una base sustentada para aplicar "National Implementation Plan—NIP" adecuadamente.

Además se debe ensayar fijar el valor límite de PCDD/PCDF en immisión (calidad del aire) alrededor de las quemas a cielo abierto.

Section VI.B.I : Guidance by source category, Annex C, Part III Source Categories – Secondary lead production (DRAFT 22/04/04) –Coordinated by Mr. Patrick Finlay (Canada)

Colombia está de acuerdo con las mejores técnicas disponibles (Best Available Techniques--BAT) y las mejores prácticas medioambientales (Best Environmental Practices--BEP) de esta guía para la producción secundaria de plomo.

Además se propone las siguientes medidas para la minimización de liberaciones de Dioxinas y Furanos en esta categoría:

Las estrategias al principio se deben concentrar en procesos industriales más generadoras de PCDD/PCDF con el lanzamiento de nuevas modernas tecnologías de producción, producción más limpia, y de modernos sistemas de control de polución de emisiones.

Se propone las siguientes medidas acerca de procesos industriales liberadores de PCDD/PCDF, con el fin de reducir las liberaciones de dioxinas y furanos:

- Conocer profundamente los mecanismos de formación de PCDD/PCDF en las plantas industriales de esta categoría. Experimentalmente se puede demostrar p.ej en caso de los procesos de fundición que

- No solo la fundición directa produce PCDD/PCDF

- En la zona de enfriamiento de los gases, como precipitadores electrostáticos, se produce casi 10 veces más PCDD/PCDF.

- Los filtros de mangas son mejores que los precipitadores electrostáticos, ya que la temperatura de trabajo puede ser < 200°C ó 150°C. Por lo tanto se debe aplicar las mejores técnicas disponibles (BAT). En caso de uso de los precipitadores electrostáticos (ESP) se debe siempre utilizar precipitadores electrostáticos fríos (c-ESP) y jamás precipitadores electrostáticos calientes (h-ESP), en donde "c-" significa la temperatura de trabajo del equipo de <220°C/150°C y "h-" de >220°C/150°C. Se recomienda la utilización de filtro de mangas.

- El mismo equipo de control de polución de aire a la temperatura de trabajo de >300°C podría emitir cerca 0,3 ng I-TEQ/Nm^3 y a la temperatura de trabajo de <200°C < = 0,1 ng I-TEQ/Nm^3.

- Un enfriamiento de choques de los gases de salida por debajo de 200°Creduce la generación de PCDD/PCDF.

- Las dioxinas y furanos pueden ser oxidadas a alta temperatura de 800—1200°C ó en un catalizador a temperatura baja.

- Las dioxinas y furanos después del filtro de mangas pueden ser reducidas de <0,05 ng/m^3 a < 0,01 ng/m^3 a través de SCR-—DeDiox catalizador .

- Las superficies activas de catalizadores metálicos (Cu, Fe, Ni, Si etc.) en la ceniza volante generando PCDD/PCDF pueden ser bloqueados mediante NH_3, H_2S ó Aminas.

- La ceniza volante impregnada con destructores inorgánicos no volátiles puede reducir 99,99% la concentración generada a la temperatura de 200—400°C por los precursores potenciales indicando que los destructores están envenenando las superficies activas de las cenizas volantes.

Se debe animar la aplicación de las mejores tecnologías disponibles (BAT) y las mejores prácticas medioambientales (BEP) en la producción secundaria de plomo utilizando filtro de mangas junto con un catalizador a descomponer los PCDD/PCDF ó la combinación de filtro de mangas con inyector de sorbente seco (como carbón activo etc.) cumpliendo el valor limite internacional en emisión al aire de 0.1 ng I-TEQ/Nm^3 de PCDD/PCDF

Como un mejor indicador de medidas de mitigación de PCDD/PCDF se debe adecuar y actualizar sucesivamente el inventario básico con base en los datos más precisos y factores de emisión, experimentales de ser posible, más específicos y ajustados a la situación real de cada país, dando una base sustentada para aplicar "National Implementation Plan—NIP" adecuadamente.

Además se deben fijar los valores límites de PCDD/PCDF en Residuos /Particulas Suspendidas Totales PST/lodos de scrubber y en vector agua (en caso se utiliza Scrubber) como el valor existente en el vector aire de 0.1 ng I-TEQ/Nm^3. De esta manera se muestra el cumplimiento de los estándares del desempeño (Performance Standards) y del desempeño de reportaje (Performance Reporting).

Section VI.F: Guidance by source category, Annex C, Part III Source Categories –Chemical production processes (DRAFT 13/04/04) –Coordinated by Mr. William Carroll (international Council of Chemical Associations)

Colombia está de acuerdo con las mejores técnicas disponibles (Best Available Techniques --BAT) y las mejores prácticas medioambientales (Best Environmental Practices--BEP) de esta guía.

Además se propone las siguientes medidas para la minimización de liberaciones de Dioxinas y Furanos en esta categoría:

- Las estrategias al principio se deben concentrar en las fuentes más generadoras de PCDD/PCDF con el lanzamiento de nuevas y modernas tecnologías de producción--- producción más limpia—y de modernos sistemas de control de polución de emisiones.

Se proponen las siguientes medidas acerca de procesos de producción de químicos con el fin de reducir las liberaciones de dioxinas y furanos:

- Conocer profundamente los mecanismos de formación de PCDD/PCDF en las plantas productoras de químicos en esta categoría. Experimentalmente se puede demostrar p.ej en el caso de la destrucción térmica de los productos subsidiarios durante de los procesos de producción de químicos orgánicos y inorgánicos que:

- No solo destrucción directa produce PCDD/PCDF

- En la zona de enfriamiento de los gases, como precipitadores electrostáticos, se produce casi 10 veces más PCDD/PCDF.

- Los filtros de mangas son mejores que los precipitadores electrostático, ya que la temperatura de trabajo puede ser <200°C ó 150°C. Por lo tanto se debe aplicar las mejores técnicas disponibles

(BAT). En caso de uso de los precipitadores electroestáticos (ESP) se debe siempre utilizar precipitadores electroestáticos fríos (c-ESP) y jamás precipitadores electroestáticos calientes (h-ESP), en donde "c-" significa la temperatura de trabajo del equipo de <220°C/150°C y "h-" de >220°C/150°C

- El mismo equipo de control de polución de aire a la temperatura de trabajo de >300°C podría emitir cerca 0,3 ng I-TEQ/Nm^3 de PCDD/PCDF y a la temperatura de trabajo de < 200°C < = 0,1 ng I-TEQ/Nm^3.

- Un enfriamiento de choques de los gases de salida por debajo de 200°C reduce la generación de PCDD/PCDF.

- Las dioxinas y furanos pueden ser oxidadas a alta temperatura de 800—1200°C ó en un catalizador a temperatura baja.

- Las dioxinas y furanos después del filtro de mangas pueden ser reducidas de <0,05 ng/m^3 a < 0,01 ng/m^3 a través de SCR-—DeDiox catalizador.

- Las superficies activas de catalizadores metálicos (Cu, Fe, Ni, Si etc.) en la ceniza volante generando PCDD/PCDF pueden ser bloqueados mediante NH_3, H_2S ó Aminas.

- La ceniza volante impregnada con destructores inorgánicos no volátiles puede reducir 99,99% la concentración generada a la temperatura de 200–400°C por los precursores potenciales indicando que los destructores están envenenando las superficies activas de las cenizas volantes.

Se debe animar la aplicación de las mejores tecnologías disponibles (BAT) y las mejores prácticas medioambientales (BEP) p.ej. en la industria de cloro, destrucción térmica de los productos subsidiarios en los procesos de producción de químicos orgánicos y inorgánicos utilizando filtro de mangas junto con un catalizador a descomponer los PCDD/PCDF ó la combinación de filtro de mangas con inyector de sorbente seco (como carbón activo etc.) cumpliendo el valor limite internacional en emisión al aire de 0.1 ng I-TEQ/Nm^3 de PCDD/PCDF

Como un mejor indicador de medidas de mitigación de PCDD/PCDF se debe adecuar y actualizar sucesivamente el inventario básico con base en los datos más precisos y factores de emisión, experimentales de ser posible, más específicos y ajustados a la situación real del país, dando una base sustentada para aplicar "National Implementation Plan—NIP" adecuadamente.

Además se debe fijar los valores límites de PCDD/PCDF en los residuos/productos subsidiarios, en el vector agua y en químicos principales producidos como el valor existente en el vector aire de 0.1 ng I-TEQ/Nm^3. Estos químicos producidos con trazas de PCDD/PCDF se deben registrar en un Inventario de Liberación de Sustancias Tóxicas como el que existe en EE.UU –denominado TRI (Toxics Release Inventory) y también en Alemania. De esta manera se muestra el cumplimiento de los estándares del desempeño (Performance Standards) y del desempeño de reportaje (Performance Reporting).

COMMENTS SUBMITTED BY GERMANY

Federal Environmental Agency

Berlin, 18.06.2004

German comments to the

Draft guidelines on best available techniques (BAT) and guidance on best environmental practices (BEP) relevant to Article 5 and Annex C of the Stockholm Convention on Persistent Organic Pollutants

The draft guidelines on best available techniques and guidance on best environmental practices relevant to Article 5 and Annex C of the Stockholm Convention on Persistent Organic Pollutants are valuable documents for giving countries information how to eliminate and restrict as most as possible PCDD/F releases from different source categories. From our site was noted, that these guidances could for developed and developing countries as well a sophisticated basis to be applied in a flexible manner.

The Federal Environmental Agency can give comments to the following source categories:

- Leather dyeing and finishing
- Chemical production process
- Open burning of wastes
- Residential combustion sources
- Firing installations for wood and other biomass fuels

Leather dyeing and finishing

As outlined in the Draft Guideline - the occurrence of PCDD/PCDF in the textile and leather industries are due to the use of chlorinated chemicals, *esp*. PCP, to protect and conserve the raw – material.
Available substitutes for preservation should be outlined in the Guidance. The following substitutes are used in Germany since the national phasing out of PCP:

- 2-Thiocyanatomethylthiobenzothiazole (TCMTB)
- o-Phenylphenole (oPP)
- 4-Chloro-3-methyl-phenole (CMK)
- 2-Octylisothiazolinone (OIT)

The mentioned chemicals are assessed as less hazardous for the environment than PCP, but not as inherently safe at all.

Chemical production processes

There are some minor comments to the guidance, which are included in the text with comments in the context of the relevant chapters. The changes are colored:

1.4.1 Fixed Bed Oxychlorination. Fixed bed reactors resemble multi-tube heat exchangers, with the catalyst packed in vertical tubes held in a tubesheet at top and bottom.

Uniform packing of catalyst within the tubes is important to ensure uniform pressure drop, flow, and residence time through each tube. Reaction heat is removed by generating steam on the shell side of the reactor, or by flowing some other heat transfer fluid through it.

Temperature control in these reactions is important. The tendency to develop hot spots in a fixed bed can be minimized by packing the reactor tubes with active catalyst and inert diluent mixtures in proportions that vary along the length of the tubes, so that there is low catalyst activity at the inlet, but the activity steadily increases to a maximum at the outlet.

Alternatively, tubes can be packed with catalyst formulated to have an activity gradient along the length of the tubes. Multiple reactors in series can also be used in fixed bed oxychlorination, providing a similar activity gradient. Using pure oxygen as feed instead of air permits lower temperature operation and therefore lowers the formation of chlorinated by-products. However this must be balanced against the cost of energy expended in producing pure oxygen. [6] [k1] Staging [k2] the air or oxygen feed and grading the catalyst activity flatten the temperature profile and allow improved temperature control.[7]

1.5 Main Product Isolation. Another common facet of these processes is the need to purify products that will either be sold or used in subsequent process steps. In virtually all cases, organic reaction products will be distilled. Fractional distillation separates streams of desired products and also separates desired product from unwanted high molecular weight materials called “heavy ends” or tars.

In the European Union the Integrated Pollution Prevention and Control (IPPC) Directive requires the use of Best Available Techniques (BAT) in generating a plant permit. To facilitate this, BAT Reference Documents (BREFs) are produced under the Directive by the European Integrated Pollution Prevention and Control Bureau (EIPPCB). Several of these are relevant to the application of BAT to processes using chlorination. For example, the BREF relating to Large Volume Organic Chemical Processes produced under the IPPC Directive contains discussion of distillation.[6]

1.6 By-product Destruction. Undesired materials, including heavy ends are destroyed in thermal processes, with or without oxygen. Figure 4 shows a prototypical heavy ends destruction train with HCl recovery.

When there are air, water and solid emissions from these processes, these streams can be analyzed and treated for by-product POPs contamination. In many Countries treatment systems are well-defined by regulation. Further information are available in the BREFs on Large Volume Organic Chemical Processes the and on Treatment of Water and Gas Outputs from the Chemical Sector. [k3]

4.1.1 Distillation and Internal Recycling of By-products.

Distillation is used primarily to produce product of a purity appropriate to downstream processing. As an example, VCM is manufactured via oxychlorination and purified by distillation. Rigorous distillation is used due to the potential for disruption of subsequent polymerization process by impurities. Unsaturated materials that might act as co-monomers competing in the polymerization and saturated or aromatic materials susceptible to free radical reactions other than polymerization can negatively impact polymerization reaction kinetics.

Distillation and high purity are important for good production. Distillation systems can be designed to effect separation of materials of closely- or widely-separated boiling points. The boiling points of chemical products of direct chlorination and the boiling points of competing impurities allow for their practical separation. Their boiling points are also sufficiently different from those of the unintended POPs, however, that virtually complete separation can

be accomplished. The Large Volume Organic BREF notes that purified EDC does not contain significant amounts of PCDD/F.[6]

Destruction of chlorinated by-product materials allows for HCl to be harvested and reused.[14] This is deemed "greater impact" because small changes in POPs generation upstream of distillation are not reflected in the quality of desired products after distillation.

~~Distillation is a means of separating the desired product from inadvertend sideproducts used across the chemical production industry from commodities of pesticides. Adapting the design and operation of distillation apparatus is, in principle, relatively straightforward.~~ [k4] Residual side product contained in commercial product can be minimized by appropriate design and operation of the distillation apparatus. Effecting more complete separation for materials with boiling points that are not so widely separated as, for example, those of vinyl chloride and the various lower molecular weight side products is for the most part a matter of correct design and construction and operation cost. Differences in concentration of residual by-product POPs in commercial product may be due to differences in local regulation of products.

4.1.5 Modified Production of Pentachlorophenol (PCP) and Sodium Pentachlorophenate.

The following processes are also described in the Toolkit.[2] Three routes to PCP are known commercially. Chlorination of phenol by Cl_2 over a catalyst, hydrolysis of hexachlorobenzene (HCB) with sodium hydroxide and thermolysis of HCB. The most common route today is the first. Sodium pentachlorophenate can be produced via hydrolysis of HCB, or more commonly, by treatment of PCP by sodium hydroxide.

For both products, careful control of reaction conditions (e.g., temperature, chlorine feed rate and purity of catalyst) leads to significant reductions of dioxin microcontaminants. In the US, emission of these materials was reduced from ca 3-4 mg I-TEQ/kg in the mid- to late-1980s to ca 1 mg I-TEQ/kg in the years since 1988 [k5].[3]

Further information referring PCDD/F-emissions from the chlorine process of titanium dioxid production:

There is one plant in Germany, which is performing this type of process (Kronos Titan, Leverkusen). Measurements gave no information of considerable emissions of PCDD/F, at least they are quite below 0,1 ng TE/m^3.

Open burning of wastes

A very helpful draft guidance.

Our observation is, that in the context of *open burning of wastes* more or less measures under Best Environmental Practices (BEP) are more relevant, than those under Best Available Techniques (BAT). This guidance seems to be a quite good example, were BEP – measures could be given priority, or falling under BEP anyway.

Residential combustion sources

For this draft guidance some comments should be taken into account, with the excuse at the other hand, that for some of them no direct proposal for reviewing is connected. These comments are:

- The issue is very difficult and quite complex, as various background conditions are to be considered. But in spite of this fact the scope of the source category should be outlined. This should include a short description, if only households or smaller and medium heating systems should be touched as far as possible connected to a performance range.
- The introduction (No. 1.0) presents some very general information about emissions for PCB, HCB and PCDD/F from residential combustion sources. We would like to propose, that any data should be used together with a quotation only and by giving the literature to make them transparently. This relates especially also to tables 1 to 3. It should be also pointed out, that emission data in this context need some background information. For PCB and HCB - as far as we are informed - currently no confidential data are available. From Germany at least, we have regrettably also no reliable data to add. Possibly such data – especially if they are not very reliable - are not needed to a big extend at this stage, as applicable measures should be in the focus of this guidance. But in any case of giving data – these should quoted thoroughly.
- The draft guidance is outlining measures in a very general way in many cases. A more descriptive outline of techniques for basic combustion types using oil, natural gas and solid fuels should be added. A differentiation between single and central heating systems should be also included. Having in mind and in spite of the fact, that this guidance will be a big issue especially for developing countries, where simple measures of BEP may be of prior interest, some examples of modern combustion techniques with BAT, used in developed countries should be given.
- Under No. 4.2 an information for developing countries is given, that the combustion of plastics in heating systems is occuring. We would propose to delete such any hint, as such a practice is and should be forbidden (deletion of the sentence: “Unfortunately, in developed countries people use plastics as fuel.”)
- The opportunity to use regenerative energies (e.g. solar) should be mentioned in the context of residential heating under "further recommendations" (No. 5.0) as alternative to classical "residential combustion".

Firing installations for wood and other biomass fuels

This paper will be helpful, but no specific focus on the requirements of developing countries can be identified. Some comments to this paper:

- Combustion of other biomass, than wood, seems to be a bit little underrepresented. It should be incorporated the information, that combustion of straw, cereals, grass and other grassy material is causing considerably higher PCDD/F – emissions, than combustion of untreated wood.

- In the context of descriptions for techniques for PCDD/F-reduction, only techniques to be applicable at bigger non-residential combustion devices are outlined. Some of these measures are only be used (e.g. SCR) in Germany in the case of combustion of treated wood. The application of effective dust precipitators should be given focus, as most PCDD/F are adsorbed at particles.
- A huge proportion of PCDD/F – emissions in Germany is emitted from residential combustion devices (in the context, that industrial sources have been reduced to a very large extend during the years). This means, that focus should be given sources of the type of residential combustion. Simple an applicable primary measures according BEP for households are primary needed. So chapter 3 and 6 should include guidance for adequate use of heating systems. Those includes:
    - No co-incineration of wastes (already in chapter 6),
    - Requirement to use licensed, higher-qualitatively fuels (no use of wet and treated wood at all),
    - periodically service for heating systems,
    - stepwise substitution of old potentially high-emission systems, where implementable by modern systems (pelleticed wood combustion, vessels with buffer saving systems).

COMMENTS SUBMITTED BY ITALY

ITALIAN COMMENTS ON

DRAFT GUIDELINES ON BEST AVAILABLE TECHNIQUES AND GUIDANCE ON BEST ENVIRONMENTAL PRACTICES

RELEVANT TO ARTICLE 5 AND ANNEX C OF THE STOCKHOLM CONVENTION

Italy would like to thank the Executive Secretary, Mr. James B. Willis, for inviting Governments and other relevant organisations to provide comments on the Draft Guidelines on Best Available Techniques and Guidance on Best Environmental Practices, developed by the Expert Group on BAT and BEP.
All the 23 documents available up to now are very valuable, and we wish to thank Experts that made a lot of work to perform them in due time. Moreover, we appreciate the choice to include in various sections relevant information taken from BAT reference documents, produced under the information exchange provisions, contained in article 16 (2) of the European Union Directive on Integrated Pollution Prevention and Control.

As a general comment, we would like only to suggest to harmonise all the contributions at the end of the process in the final draft to be presented at COP1.

In effect, some little differences arise reading the texts: for instance, some sections give an idea about costs of the described techniques, while others do not refer to this aspect. Another characteristic not always mentioned is the achievable reduction level associated with the adoption of the techniques, or their applicability to new and/or existing plants. From our point of view, these information are useful and should not be missed, because their knowledge helps to evaluate the best solution.

Some sections make a clear distinction between BAT and BEP, while in others the two are mixed: this may ingenerate confusion in the reader and in the final user of the document. The mandate of the Expert Group is *to develop guidelines on best available techniques and to develop provisional guidance on best environmental practices relevant to the provisions of article 5 of the Convention, for consideration by the Conference of the Parties upon entry into force of the Convention* (see document UNEP/POPS/INC6/22, Annex VII: "Terms of reference for the Expert Group on Best Available Techniques/Best Environmental Practices").
During the EGB1 meeting it was recognised that *BEP is a more overarching notion that might include policies and strategies, while BAT is well defined and conceptually developed in the text of the Convention,* (see EGB1 meeting report, point 25 and 26).
Therefore, we suggest to separate the descriptions of BATs from those of BEPs in all sections, so helping final users of the guidelines and guidance in choosing of the best solutions.

The document of Section II, "Consideration of alternatives", is the only one that has some paragraphs in square brackets. The introductory note of one of the two co-ordinators clarifies the reason why this happened. We are confident that the difference of views among Experts will overcome during the third meeting of the Expert Group, scheduled in Japan next October.

COMMENTS SUBMITTED BY JAPAN

JAPAN

Date: June 23, 2004

Japan's comments on the Draft guidelines on best available techniques and guidance on best environmental practices relevant to Article 5 and Annex C of the Stockholm Convention on Persistent Organic Pollutants are as follow.

General Comments:

1. In current draft guidelines, numerical values such as "Emission Limit Value," "Achievable Level," etc., and the measurement data are given as reference information in several parts. However, the following points should be clarified before providing numerical values.

First, different measuring methods of PCDD/PCDF are used by countries. Under the circumstance, the same quantity of unintentional PCDD/PCDF emission could be estimated differently according to the measuring method. Therefore, specific conditions under which the numerical values are estimated should be clarified.

The second point regards variation of units used by countries. In the guidelines, many units including m^3, Rm^3, dscm are used. They should be harmonized, for example, by using conversion formulas.

2. Some of the current draft guidelines refer to the release limit values as "Emission Limit Value," "Achievable Level," etc.. In order to avoid unnecessary confusion, these expressions should be unified so that it is clear that those levels are referential values. In paragraph 29 of the report of the 2nd session of the Expert Groups on BAT and BEP, it is agreed that the release limit values in guidelines are included as reference information. (See the 2nd session of the Expert Groups on BAT and BEP practices)

3. We would like to provide Japan's emission standards and effluent standards of dioxins (see attached table).

Specific Comments:

4. [Section V. A. 1 Waste Incinerators: Municipal and hazardous waste, and sewage sludge]
(Page 8) 3.1 General Incinerator Design, Paragraph 1

With regard to the sentence "Incinerators are designed for full oxidative combustion over a general temperature range of 850-1400ºC.," we would like to clarify the meaning of "combustion."

In Japan, combustions are categorized according to the temperature under which these combustions are conducted as follows; "-1000ºC: combustion," "1000-1200ºC: calcinations," "1200ºC-: melting." Please instruct us on if the "combustion" in the sentence contradicts with the above categories or not.

5. [Section V. A. 1 Waste Incinerators: Municipal and hazardous waste, and sewage sludge]
(Page 13) 3.2.2.3 Refuse-derived fuel, Paragraph 2, 16

The expression "very large" MWC facilities seems inadequate from Japan's standard. In Japan, relatively large-scale MWC facilities, including the scale of 30t/16h, are used to incinerate refuse-derived fuel as it is difficult for small-scale MWC facilities to recover heat efficiently.

6. [Section V. A. 1 Waste Incinerators: Municipal and hazardous waste, and sewage sludge]
(Page 35) 6.3.2 Fly Ash and Other Flue Gas Treatment Residue Techniques, Paragraph 12

We propose to amend the sentence into the following:

"If the content exceeds the limit, the ash must be stabilized or destruct."

(Reason) Japan possesses a scientific concern that re-incineration of fly ash may discharge undecomposed dioxins. Therefore, re-incineration is not permitted for fly ash treatment in the Waste Management and Public Cleansing Law in Japan.

7. [Section V. A. 2 : Waste Incinerators: Medical Waste]
(Page 8) 5. Alternative Techniques Diagram, (APPROPROATE TREATMENT OPTIONS: frame 3)

We propose to add the following sentence:

Sharps (not infection)	→	□Municipal waste incineration (specially adapted for this purpose) □Hazardous waste disposal route(e.g.,sterilization)

(Reason) As sterilization is equally effective in treating sharps, sharp wastes are treated in the same manner as infectious wastes under the Infectious Waste Treatment Manual in Japan. Therefore, not only incineration but also sterilization are allowed as a disposal method.

8. [Section V. C : Production of pulp using elemental chlorine or chemicals generating elemental chlorine for bleaching]

Our final comment regards Draft Guideline on BAT for production of pulp using elemental chlorine submitted by the secretariat. Due to Japan's dioxin problems in 1989, oxygen bleaching has been introduced to all bleaching plants. Some of the plants are smoothly converting to ECF and we believe the process will be complete by FY2005. Moreover, most of the technologies mentioned in BAT have already been carried out in Japan.

- END -

Regulations for Emission Gas and Effluent Relating to Dioxins in Japan

The control standards for dioxins for the emission gas and effluent have been set in the Law Concerning Special Measures against Dioxins (the Dioxins Law; promulgated on July 16, 1999) at the strictest values achievable at present.

Dioxins are defined to include PCDDs, PCDFs and co-planar PCBs in the Dioxins Law.

The level of dioxins is expressed as TEQ calculated according to WHO-TEF(1998).

1) **Emission standards** (Unit: ng-TEQ/m^3 N)

Type of Specified Facilities	Scale of facilities (Capacity of incineration)	Standards for new facility	Standards for existing facility
Waste incinerators (hearth area is more than 0.5 m^2 or capacity of incineration is more than 50 kg/h)	More than 4t/h	0.1	1
	2t/h – 4t/h	1	5
	Below 2t/h	5	10
Electric steel-making furnaces		0.5	5
Sintering facilities for steel industry		0.1	1
Facilities for collecting zinc		1	10
Facilities for manufacturing aluminum base alloy		1	5

2) **Effluent standards** (Unit: pg-TEQ/L)

Type of Specified Facilities	Standard
• Bleaching facilities using chlorine or chlorine compounds used for manufacturing sulfate pulps (kraft pulps) or sulfite pulps. • Cleansing facilities for acetylen used for manufacturing acetylene by carbide method • Cleansing facilities for waste gas used for manufacturing potassium sulfate • Cleansing facilities for waste gas used for manufacturing alumina fiber • Cleansing facilities for dichloroethane used for manufacturing vinyl chloride monomer • Sulfuric acid concentration facilities, cyclohexane separation facilities, and waste gas cleansing facilities used for manufacturing caprolactam (limited to using nitrosyl chloride) • Water washing facilities and waste gas cleansing facilities used for manufacturing chlorobenzene or dichlorobenzene • Filtering facilities, drying facilities and waste gas cleaning facilities used for manufacturing of sodium hydrogen 4-chlorophthalate • Filtering facilities, drying facilities and waste gas cleaning facilities used for manufacturing of 2,3-dichloro-1,4-naphthoquinone • Nitro-derivative and its reductant separation facilities, nitro-derivative and its reductant cleansing facilities, dioxazineviolet cleansing facilities, and hot-air drying facilities used for manufacturing dioxazineviolet • Cleansing facilities for waste gas and wet dust collecting facilities relating to roasting furnaces, melting furnaces or dry kilns used for manufacturing aluminum or aluminum–base alloy • Refining facilities, waste gas cleansing facilities, and wet dust collecting facilities used for recovering of zinc (limited to zinc recovery from dust that is generated from electric steel-making furnaces and collected by dust-collector) • Cleansing facilities, wet dust collecting facilities, and ash storing facilities which are related to waste incinerators (hearth area is more than 0.5m^2 or capacity of incineration is more than 50kg/h) and discharge sewage or waste solution • Resolving facilities for waste PCB or PCB-processed products • Cleansing facilities for PCB contaminated matter or PCB-processed products • Facilities for disposing water discharged from plants or business places with facilities mentioned above • Terminal treatment facilities for sewerage relating to facilities mentioned above	10

Note 1: The standard relating to water discharged from terminal waste disposal facilities is 10pg-TEQ/L based on instructions stipulating standards for maintenance and management based on the Wastes Disposal and Public Cleaning Law.

COMMENTS SUBMITTED BY JORDAN

٦/١٢/٧/ت

THE HASHEMITE KINGDOM OF JORDAN

Ministry of Planning and International Cooperation

AMMAN

المملكة الأردنية الهاشمية

وزارة التخطيط والتعاون الدولي

عمان

Ref. No. 12/3/3/4603 ..... الرقم

Date 14/6/2004 ..... التاريخ

..... الموافق

Mr. James B. Willis
Executive Secretary
Stockholm Convention
United Nations Environment Programme
11-13, Chemin des Anémones
CH-1219 Châtelaine,
Geneva, Switzerland
Fax: (+ 41 22) 797 3460

Subject: Draft guidelines on best available techniques and guidance on best environmental practices relevant to Article 5 and Annex C of the Stockholm Convention

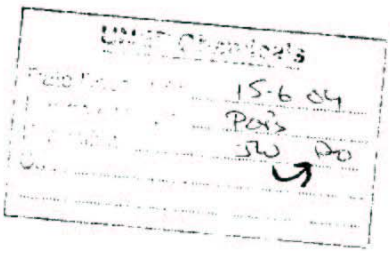
Dear Mr. Willis,

Reference is made to your letter dated 16 April 2004 regarding the above-mentioned subject. Kindly be informed that the Government of Jordan has no comments regarding the afore-mentioned guidelines.

Please accept my high esteem and consideration.

Sincerely,

Dr. Hazim El-Naser
Acting Minister of Planning
and International Cooperation



هاتف: ٨٥ / ٤٦٤٤٣٨١ – ٧٠ / ٤٦٤٤٤٦٦ (٦ – ٩٦٣) – فاكس: ٤٦٤٩٣٤١ – ٤٦٤٢٢٤٧ – برقياً NPC جو – ص.ب ٥٥٥ عمان ١١١١٨ الأردن
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قرار رقم ١١١ /٢٠٠٢

COMMENTS SUBMITTED BY PERU

Consideraciones Generales

Consideramos muy importante la elaboración y difusión de estas guías técnicas ya que nos permitirán promover la aplicación de las Mejores Técnicas Disponibles (BAT) y las Mejores Prácticas Medioambientales (BEP) sobre Contaminantes Orgánicos Persistentes (COPs) en nuestro país.

En el Perú se viene realizando el Proyecto: "Inventario de Existencias de PCBs e Identificación y Cuantificación de Liberación de Dioxinas y Furanos" y se está por dar inicio al proyecto "Plan Nacional de Implementación de para la Aplicación de COPs en el Perú" por lo que estas guías serán de mucha importancia.

Sobre los temas que se están por desarrollar en las guías

Consideramos necesario recomendaciones en los relacionado a la forma correcta de usar estas guías y a la forma adecuada de aplicarlo, por este motivo pedimos que se tomen en cuenta estas consideraciones durante el desarrollo de la parte C del Capítulo I: "Como usar estas guías".

Tomando en cuenta que en nuestro país todavía no se aplica una normatividad específica en lo referente a la aplicación de Convenios Internacionales como el de Estocolmo, creemos importante que se termine de desarrollar el punto E del Capítulo III en lo referente a aspectos legales para la aplicación de estas guías.

Teniendo el Perú una Ley de Cementerios y Servicios Funerarios y siendo la cremación de cadáveres una práctica que se da en nuestra patria, en muchos casos sin tomar en cuenta la liberación de los COPs, creemos muy oportuno y satisfactorio que se desarrolle el punto F del Capítulo VI sobre Cremación, ya que permitirá la aplicación de las BAT y BEP en esta actividad.

Sobre temas que proponemos se incluyan

Sugerimos que se considere el desarrollo de la Aplicación de BAT y BEP en el Desguace y Desmantelamiento de Navíos y Embarcaciones. Creemos que esta actividad, cuando se lleva a cabo en malas condiciones, no permite una buena separación de COPs como los aceites y PCBs y una mala disposición de las fracciones ligeras (restos de pinturas, aceites, plásticos y otros) libera Dioxinas y Furanos cuando la incineración de estos se realiza en condiciones no controladas. En nuestro país se viene realizando esta actividad y creemos que con la aplicación de las BAT y BEP se controlará la liberación de estos COPs.

Sobre los Temas Desarrollados

d.1) Incineradores de Desechos Municipales y Peligrosos

Si bien es cierto que en las técnicas de combustión del capítulo 6 sobre BAT nos indican los parámetros a controlar para asegurar una buena combustión, creemos necesario que se mencionen las características de las cenizas resultantes de la incineración que se deben analizar y determinar para verificar que se ha realizado una buena combustión.

Creemos conveniente que en el capítulo 3 sobre Diseño y Operación de Incineradores de la sección V.A.I correspondiente a la Incineración de Desechos, se incluya diagramas de flujo y su respectiva descripción del proceso de incineración especificando la ruta que sigue el desecho para los diferentes tipos de procesos de incineración.

d.2) Incineración de Desechos Hospitalarios

En cuanto a la inclusión de BAT y BEP en la incineración de desechos peligrosos y hospitalarios, así como el autoclavado, lo consideramos importante y oportuno ya que en nuestro país se está empezando a utilizar estas técnicas y la aplicación adecuada de estas guías nos permitirá realizarlas sin perjuicio de la salud y el medio ambiente en lo referente a los COPs. En el Perú todavía no aplicamos la incineración de desechos municipales.

d.3) Hornos de Cemento

De la misma forma la incineración de desechos peligrosos en hornos de cemento en el Perú todavía no es una práctica autorizada y siendo un problema la disposición de residuos peligrosos que contienen COPs como residuos de aceite y envases de plaguicidas, consideramos oportuno y adecuado que se haya desarrollado el capítulo referente a las BAT y BEP en la incineración de residuos peligrosos en hornos de cemento lo que nos permitirá tener una alternativa limpia sin liberación de COPs en la disposición de residuos peligrosos como los plaguicidas.

d.4) Idioma y Vocabulario

Siendo necesario la difusión de estas guías entre todos los sectores involucrados en nuestro país como el sector industrial en el marco de la Implementación del Convenio de Estocolmo, consideramos adecuado se publiquen estas guías en el idioma español y se establezca un glosario de términos generales utilizados en estas guías.

Consideraciones Finales

Estando nuestro país en un proceso de desarrollo y considerando que el objetivo del Convenio de Estocolmo es proteger a la salud humana y el medio ambiente frente a los contaminantes orgánicos persistentes, creemos que la aplicación de estas guías en nuestro país serán una gran herramienta para lograr el objetivo.

_____
Ing. Domitila Briones Yañez
DIGESA – Ministerio de Salud
PERU

COMMENTS SUBMITTED BY THE PHILIPPINES

SUBJECT: Comments on the Draft Guidelines on Best Available Techniques and Best Environmental Practices

The Philippines currently has two (2) projects associated with POPs:

- Philippine Enabling Activity Project – Initial Assistance to the Philippines to Meet Its Obligations Under the Stockholm Convention on Persistent Organic Pollutants (POPs)
- Demonstration of Viability and Removal of Barriers that Impede Adoption and Effective Implementation of Available, Non-Combustion Technologies

The Draft Guidelines on Best Available Techniques and Best Environmental Practices provides very useful information especially in choosing the most economical yet environmentally-sound technologies and processes in areas where there is a possibility of POPs release into the environment. The guidelines and suggestions are very useful in formulating regulations and policies to further reduce and manage POPs.

In the issue of incineration, Republic Act 8749, or the Clean Air Act of the Philippines, banned the use of incineration which is a major contributor to the release of dioxins and furans.

We are now in the process of formulating our National Implementation Plan (NIP) which is the final output of the Philippine Enabling Activity Project on POPs. The other activities conducted under this project were the Initial National Inventory on POPs, Capacity and Needs Assessment for the Country's Compliance to the Stockholm Convention, and the Public Awareness and Information Campaign Program. The Draft Guidelines on BAT and BEP will be used as a basis in prioritizing goals and policies for the country's compliance to the Stockholm Convention through the NIP. The guidelines listed are comprehensive and covers most of the processes being used in our country. But due to economic constraints, crude equipment and processes are being employed by the industry to perform these processes which lead to release of POPs.

Future policies and guidelines on the management of POPs releases will be based from these guidelines and these will be reflected on the priorities and objectives that will be set for the National Implementation Plan (NIP).

ANGELITA T. BRABANTE
POPs Project Coordinator

COMMENTS SUBMITTED BY SLOVAKIA

Ministry of the Environment of the Slovak Republic
Waste management department

Bratislava 14.6.2004
Number: 682/2004-min
241/2004-6
809/2004-6.2

ssc@chemicals.unep.ch

Slovak comments on draft guidelines on BAT and guidance on BEP relevant to Article 5 and Annex C of the Stockholm Convention on POPs

Slovakia welcomes these both document prepared by the Expert Group for next session which be held in October 2004 in Japan. We agree with discussed versions.

Concerning the draft guidelines on best available techniques, Slovakia is of the opinion that it is a very important issue also as a basis for the giving a right statement on establishing several new waste recovery and waste disposal installation at regional and district level.

It is also needed to ensure the application of the most appropriate combination of environmental control measures and strategies in the practice. To ensure it by the way "guidance on best environmental practices" seems to be a very good idea in view of the need to ensure control not only waste handling but also the conditions of production processes and of the marketing.

We hope that in the future we will be able to find some our experts to joint in discussion by E-mail on several documents from this area thanks to implementation of the Regulation of the European Parliament and of the Council on POPs amending Council Directive 79/117. It seems to be good basis for mutual work government-designated experts in the field of the best available techniques and best environmental practices.

In Slovakia there are on going following international projects to help us to be prepared to implement the Stockholm Convention on POPs:

1. **"Initial assistance to the SR to meet its obligations under the Stockholm Convention on POPs"**
2. **"Demonstration of Viability and Removal of Barriers that Impede Adoption and Effective Implementation of Available, Non-combustion Technologies"**
3. **"Dioxin emissions in Candidate Countries"**
4. **Strengthening of Institutional Basis for Safe management of Chemicals"**
5. **"Regional approach for the environmentally sound management of POPs as waste in selected CEE countries".**

We hope that thanks all these projects Slovakia will be able to find national experts for next mutual work in the field of the best available techniques and best environmental practices and to ensure efficient functioning co-operation in the future.

Prepared by:
Ing. Marta Fratricova from the Waste Management Department at the Ministry of the Environment of the Slovak Republic (WMD of the MoE of the SR).
Approved by:
Ing. Peter Gallovic, Head of the WMD at the MoE of the SR
Ing.Ivan Mojík, Designated Head of the Environment Protection Section at the MoE of the SR

COMMENTS SUBMITTED BY TRINIDAD AND TOBAGO

MINISTRY OF PUBLIC UTILITIES AND THE ENVIRONMENT

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MPUE: 14/1/16

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UNEP Chemicals
Date Received: 17-6-04
BAT/BEP
JW DO MC

Dear Dr. Wills,

Re: Comments on Draft Guidelines on Best Available Techniques (BAT) and Best Environmental Practices (BEP) relevant to Article 5 and Annex C of the Convention

I refer to your letter dated February 11, 2004 on the subject at caption. In this regard, the following comments are provided.

Production of pulp using elemental chlorine or chemicals generating elemental chlorine for bleaching.

- Additional information is required on the release of unintentional Persistent Organic Pollutants (POPs) during paper production.
- Elemental Chlorine in the wastewater that flows into surface and underground water can destroy ecosystems. Processes such as ion exchange should be considered in order to remove the chlorine from the wastewater.

Open burning of wastes, including burning of landfill sites

- Methods to reduce air emission and the production of POPs such as methane collection systems and waste segregation of highly combustible wastes should be included in the guideline

Cement Kilns firing Hazardous Wastes

- The highly toxic nature of most hazardous wastes necessitates the inclusion of methods for pre-treatment to neutralize such waste before they are utilized as fuel in cement kilns.

Waste Incinerators/Medical Waste Incineration

- Consideration should be given to providing guidelines for the use of small thermal converters (incinerators) with proper air emission controls in hospitals and medical clinics.

Waste Incinerators/municipal and other waste incineration

- Consideration should be given in the guidelines to including "waste to energy" incinerators where the resultant energy can be used to generate power.

.....

f/Permanent Secretary
Ministry of Public Utilities and the Environment

PERMANENT SECRETARY
Ministry of Public Utilities
and the Environment

COMMENTS SUBMITTED BY THE UNITED STATES OF AMERICA

United States Comments on International BAT/BEP Guidelines for Unintentional POP's

Processing of Metals (Papers under sections V.D. & VI. B.)

1) The results presented in the paper for dioxins/furans (D/F) from secondary aluminum production, magnesium production, and sinter plants in the iron and steel industry are consistent with what we know about US plants.
2) For primary aluminum production, the paper presents that D/F were judged not to be significant, and that is consistent with what we found in the US.
3) We have no data for D/F from US electric arc furnaces (EAFs), so we do not know how applicable the results in the paper are. However, the techniques discussed for reducing D/F from EAFs are consistent with some of those we are considering in the US (the US regulation related to EAF's may get co-control of D/F). Primary measures mentioned in the EAF paper for D/F control are:
    i) Reducing contaminants such as oil, plastics, and other hydrocarbons in the scrap (which also reduces VOC and volatile HAP)
    ii) Proper operation of the EAF (reducing air infiltration, replacing the roof cover after charging, avoiding operational delays)
    iii) Adequately sized evacuation system
    iv) Continuous parameter monitoring system (to make sure everything is operating properly)

    Secondary measures include:
    i) Having an efficient dust collecting system such as a baghouse, because higher dust collection relates to better D/F control.

    Also mentioned are other control methods using post combustion/rapid water quench and carbon injection, neither of which are used at US plants (some European plants have these). It is indicated that there might be some site-specific considerations (space, configuration, cost) that might limit the applicability of these techniques to existing plants.

4) Overall, secondary steel recommendations for control seem reasonable.

Production of pulp using elemental chlorine or chemicals generating elemental chlorine for bleaching (Section V.C.)

No comments on these guidelines, other than some grammatical and typographical errors.

Open burning of wastes (Section VI. A.)

This Annex is well written and clearly understood. For the most part it appears to be technically correct. Comments by section:

Section 1

1) We would not qualify those devices that are merely drums as "incinerator." BAT incineration also includes provisions for removal of particulate matter and acid gases, not just provisions to minimize dioxins.
2) I would not make a comment on the use of open piles as a method of reducing dioxins. The Lemieux et al (2003) study only had 1 data point for open piles and the dioxin emissions data for that 1 test were within the spread of the baseline combustion condition. There are not sufficient data to support assumptions that open pile combustion will have higher (or lower) dioxin emissions.
3) Is there really evidence that fireworks are a substantive source?
4) In the last sentence of Section 1, I think you mean upwind of residential areas not downwind.

Section 2

1) The first sentence is not a sentence and perhaps should begin with: “In general, this includes…”
2) “geographical boundaries to be burned” is awkward. Instead, it could read “Intentional burning may not constitute well-controlled combustion, even if the area to be burned is well defined.” (Section 2.1.1)
3) Do inhibitors “adversely effect” dioxin formation? (Section 2.1.1)
4) I have not seen any studies that suggest that application of herbicides or pesticides produced increased risk of PCDD/F formation. (Section 2.1.5)
5) Note that it is not clear that small prescribed burns lead to less PCDD/F than “more devastating inadvertent burns.” (Section 2.1.5)

Section 3

1) This section notes that there has been significant study of open burning of wastes. This is not an accurate characterization. Further, the reference provided, #7, deals with forest fires, not waste. (Section 3.1.1)
2) The statement: “Variation in waste among countries” is probably true. However, a reference would help. (Section 3.1.1)
3) “Garbage” and “refuse” are not synonymous. Garbage is putrescible organics; refuse is all of the other stuff. Those are definitions from the field of environmental engineering. (Section 3.1.1)
4) “Burnings should be a last resort…”. The word “open” should be inserted at the beginning of this sentence, otherwise this statement (and perhaps others like it earlier in the document) is not supported by evidence presented in this document. It should not be presented *a priori* without this sufficient caveate. For example, composting is given the impression as a more favorable option. But what if the compost is used for subsistence farming, resulting in substantial heavy metal ingestion? What if the recycling processes (e.g., waste aluminum) result in substantially more PCDD/F than a modern waste to energy facility? (Section 3.2.5)

Section 4

1) Tires do not necessarily have a relatively high amount of sulfur. It would be more accurate to say that tires have a similar amount of sulfur as is found in medium sulfur coals. Open burning of tires produces huge amounts of particulate matter (mostly a carbon black type of particulate) as well as PAHs (particularly Benzo(a)pyrene and benzene). In addition open burning of tires produced an oozing oily liquid that can contaminate ground water.
2) Tires have also been successfully used in rubber modified asphalt which greatly extends the lifetime of the pavement (Section 4.2.4).

References

Lemieux, P.M.; Gullett, B.K.; Lutes, C.C.; Winterrowd, C.K.; Winters, D.L. (2003), "Variables Affecting Emissions of PCDDs/Fs from Uncontrolled Combustion of Household Waste in Barrels," *AWMA J*, Vol. 53, pp. 523-531.

COMMENTS SUBMITTED BY MEMBERS OF THE EXPERT GROUP

COMMENTS SUBMITTED BY PROF. ALAMIR BARKAHOUM (ALGERIA)

1-INCINÉRATION DE BIOMASSE NON ASSOCIÉE À L'ÉNERGIE

1-a Nettoyage pour l'agriculture

- Pratiques d'incinération du chaume de blé interdite
- Le reste des déchets est enfouis lors des labours
- Certains déchets sont transformés en aliments de bétail

A) Composition des déchets

- Mauvaises herbes
- Reste des moissons
- Broussailles diverses

B) Barrières à l'effet d'éliminer l'incinération à ciel ouvert

Barrière	Remède
Ignorance	Education et sensibilisation
Manque d'informations	Création de cellule d'information au niveau des communes.
Manque de Moyens	L'état doit aider l'agriculteur par un financement ou des prêts.

C) Documents Politiques Spécifiques

- Loi n°93-03 du 05/02/83 relative à la protection de l'environnement.
- Loi n° 01-19 du 12/12/01 relative à la gestion du contrôle et à l'élimination de déchets.
- Loi n° 01-20 du 12/12/01 relative à l'aménagement du territoire et du développement durable.

D) Minimisation des Déchets/ Stratégies de Diversion

Traitement des sols par des désherbants.

E) Alternatives disponibles concernant l'incinération à ciel ouvert

Dégradation naturelle pour éviter l'incinération.

F) Techniques d'incinération et attributs

Les déchets sont brûlés à l'air libre, sans aucun contrôle.

G) Techniques d'amélioration

Propositions d'incinération contrôlés par combustion bien aérée

H) Variation Régionale

Trois principales catégories de régions :

- Partie nord : oléagineux, primeurs
- Haut plateau : céréales
- Partie sud : primeurs et palmiers

I) Commentaires

Les déchets générés par « Nettoyage pour l'Agriculture » ne posent pas véritablement un problème de pollution en Algérie, néanmoins, un contrôle de leur gestion doit être mis en place à l'avenir.

I-b Feux de forêts imprévisibles

A) Types de matériaux d'alimentation/composition

- En Algérie les espèces les plus dominantes sont :
  - le pin d'Alep : localisé généralement en montagne (Atlas Blidéen, kabylie)

- le liège : localisé le long de la côte Est Algérien (jijel, collo).

- Il n y a pas de résidus de bois de forêts du fait de l'inexistence d'industrie forestière.

- Les grandes surfaces forestières sont gérées par le ministère de l'Agriculture (Direction Générale des Forêts).

Les feux de forêts imprévisibles se déclarent généralement durant la période estivale. Ils généralement sont provoqués.

- Les types de forêts varient avec la géographie (ex : espèces, densité, taille, etc.) [Non dépendant de l'état de développement du pays] ;
- Résidus de bois laissé dans les forêts par rapport à tous les arbres/buissons ;
- La biomasse par hectare dépend des espèces, de la géographie, du climat ;
- Les différentes espèces peuvent avoir différentes concentrations de produits chimiques dangereux, ex : le contenu du chlore ;
- Les forêts peuvent être gérées ou naturelles ;
- Les forêts peuvent être traitées avec des produits chimiques, qui constituent soit, des précurseurs des PCDD /PCDF (ex : 2,4,5 d'acide trichlorophénoxyacétique (2,4,5-T) 2,4-d'acide dichlorophénoxyacétique (2,4-D) du pentachlorophénol dans le cas des résidus de bois) soit des métaux catalytiques, (ex : du cuivre) soit des inhibiteurs, (ex : du sulfure) ;
- Les feux de forêts peuvent être accidentels ou le fait d'incidences.

B) Barrières pour éliminer les Feux de Forêts

Barrière	Remède
1. Départ naturel : élévation de la température	- Nettoyage et élimination de corps pouvant déclencher un feu. - Aménagement d'accès et d'installation de coupes feux.
2. Imprudence, Ignorance des dangers	- Education - Réglementation stricte - Renforcement de moyens de gardiennage.
3. Feux intentionnels pour récupération du bois	- Renforcement de gardiennage - Renforcement et application de la législation.
4. Terrains difficiles	- Prévoir l'équipement adéquat.

C) Documents Politiques Spécifiques

- Application de la législation en vigueur relative à la protection des forêts (décret de 1987).

D) Minimisation des occurrences, Taille/Impact

- Il existe un plan de renouvellement des forêts qui se traduit annuellement par des campagnes de reboisement (exemple du Barrage vert pour lutter contre la remontée du désert).
- Aucune réglementation disponible n'autorise l'incinération à ciel ouvert.
- Renouvellement de la forêt
- Interdiction de permis pour des brûlages prescrits
- Interdiction générale
- Réduction des permis (ex : seulement dans les régions éloignées ayant une faible exposition aux humains/ production de l'alimentation) ;

- Réduction à de la végétation à brûlage rapide
- Restreint aux régions qui fournissent de bonnes conditions de combustion
- Dés que cela arrive, il faut protéger les humains, les animaux, et les marchandises de l'impact direct du feu (y compris les avertissements, et peut-être l'évacuation) ;
- Au déclenchement du feu , s'assurer qu'il y en place un système à activer pour l'éteindre.
- Au déclenchement de l'incendie, des mesures de prévention/ de minimisation de l'étalement des résidus brûlés doivent être initiées (ex : la gestion des cendres si nécessaire) ;
- Initiez des contre-mesures pour limiter l'impact.

E) Alternatives disponibles concernant l'Incinération à Ciel Ouvert

- Nettoyage manuel irrégulier
- Les gardes forestiers sont équipés de moyens de communications, en plus d'installation de miradors pour les grands espaces. La protection civile intervient rapidement à l'aide de moyens mis à sa disponibilité.
- L'infrastructure d'intervention rapide existe depuis longtemps, mais reste cependant insuffisante quand il s'agit de terrains accidentés.
- Nettoyage mécanique (pour les brûlures dues à des incendies)
- Les impacts des accidents peuvent être limités seulement par l'intervention rapide pour éteindre le feu
- Pour empêcher la gravité : interdiction de l'utilisation / application de précurseurs ou de métaux catalytiques de formation de PCDD/PCDF ;

F) Les Incinérations- peuvent varier d'une région à une autre

- Les causes d'incendies sont à la fois intentionnelles et accidentelles.
- Les feux de forêts se déclenchent pendant la période des grandes chaleurs (forêts sèches, incendies avec flammes).
- Dans les zones accessibles, les feux de forêts sont généralement circonscrits rapidement, contrairement aux zones accidentées où les feux ravagent totalement la zone boisée. Les cendres générées se déplacent parfois jusqu'aux zones habitées.
- Causes : Intentionnelle « » Accidentelle
- Feu chaud à ciel ouvert dans les forêts sèches
- Le brûlage lent sans flamme dans un environnement humide (note : l'humidité ne peut pas augmenter indéfiniment)
- La longueur de temps du feu et donc, le nombre d'arbres/ buissons brûlés

G) Techniques d'amélioration abattements

Il n'existe pas d'incinération de déchets de forêt à ciel ouvert programmées. Ce type de déchets se dégradent naturellement.

H) Variations régionales

I) Commentaires

Les feux de forêts accidentels, ne peuvent pas être évités, et se produisent surtout en été (Juillet-Août). Divers mesures sont prises par les pouvoirs publics, pour minimiser le déclenchement des feux de forêts (nettoyage des espaces, surveillance renforcée, et existence d'un plan ORSEC pendant la période estivale).

I-c <u>Nettoyage de la végétation pour préparer la moisson</u>

A) Composition des déchets.

- Matériau organique dérivé des plantes. Une source de plantes spécifique peut varier, et peut avoir un petit effet.

B) Barrières pour éliminer les incinérations à ciel ouvert

Barrière	Remède
1- Ignorance, manque d'informations	Education et sensibilisation
2 - Moyen	L'état doit aider l'agriculteur par un financement sous forme de prêt

A) Documents Politiques Spécifiques
B) Minimisation des déchets
C) Alternatives disponibles à l'incinération à ciel ouvert

- Retrait mécanique avec addition de nutriments
- Les techniques de plantation sans incinération (pour des cultures appropriées)

D) Techniques d'incinération et Attributs
E) Techniques d'Amélioration

- Choix des jours pour permettre la réduction de l'exposition des humains à la fumée

F) Commentaires

2- FEUX DE DÉCHARGES PUBLIQUES

(Intentionnels ou imprévisibles)

A) Composition des déchets

Les déchets solides mis en décharge, subissent une récupération à hauteur de 20 %. Les produits récupérés pour un éventuel recyclage sont :les matières plastiques et certains matériaux. Cette récupération est faite par des « chiffonniers » qui leur permet un gain substantiel.
Ces décharges publiques ne sont pas totalement gérées ce qui entraîne pour la majorité d'entre elles des combustions non contrôlées.

B) Barrières pour éliminer les incinérations à ciel ouvert

Barrière	Remède
1.Recherche de terrains adéquats (sol imperméable loin des habitations, voies d'accès rapides etc. …)	*Etude d'impact pour l'implantation des décharges contrôlées *Gestion rigoureuse des CET *Mise en place de centres d' enfouissement techniques à travers le territoire national.
2. Accès non contrôlé	*Meilleures pratiques de gestion (clôture, gardiennage, contrôle des déchets, etc. …)
3. Canalisation des Bio gaz formés	*Dans les CET au stade de la réalisation, des bio gaz formés sont collectés et brûlés (torchères) *Utilisation des bio gaz comme source d'énergie.
4.Tri en amont (à partir de la ménagère)	*Sensibilisation *Mettre à la disposition des ménagères des sachets de couleur différente pour le tri.
5. Ramassage	*Rentabiliser et renforcer les moyens de collectes *Ramassage des déchets à des horaires convenables.

C) Documents politiques

- Des textes réglementaires concernant la gestion des déchets solides existent :
  - Loi n°93-03 du 05/02/83 relative à la protection de l'environnement.
  - Loi n° 01-19 du 12/12/01 relative à la gestion du contrôle et à l'élimination de déchets.

- Loi n° 01-20 du 12/12/01 relative à l'aménagement du territoire et du développement durable.

- Avec l'ouverture prochaine des centres d'enfouissement technique (CET) l'incinération à ciel ouvert bne posera plus de problème ; les bio gaz sont brûlés à travers les torchères.

D) Minimisation des Déchets / Stratégies de Diversion

- La stratégie algérienne en matière de gestion des déchets solides, se base essentiellement sur les points suivants :

  Le tri en amont qui permettra de recycler certains déchets et produire un composant pour les besoins de l'agriculture.

E) Alternatives disponibles à l'incinération à ciel ouvert de ces déchets

Les centres d'enfouissement techniques représentent une alternative à l'incinération des déchets à ciel ouvert..

Dans ce cadre, l'Algérie, a lancé un programme de réalisation de 48 CET. Ces CET régleront le problème d'utilisation de grandes surfaces et les émanations de fumées.

F) Techniques d'incinération et attributs

Dans les zones rurales, les habitants incinèrent eux mêmes leurs déchets.

G) Techniques d'amélioration

A travers le tri qui se fera en amont, il est possible d'améliorer l'incinération en évitant les combustions génératrices de dioxines et furannes.

H) Variations Régionales/Commentaires

Dans les grandes agglomérations les déchets générés sont plus diversifiés et susceptibles d'émettre des dioxines et furannes et leur gestion doit être prise en charge d'une manière différente que la gestion des déchets provenant des zones rurales.

3- DÉCHETS RÉSIDENTIELS

A) Composition des Déchets

L'organisme chargé de la gestion des déchets au niveau d'Alger (NETCOM) envisage une étude sur la composition des déchets produits par la population de la ville.

La quantité de ces déchets a été estimée en 2003 à un million de tonne, constitués principalement de déchets ménagers (humides).

B) Barrières pour éliminer l'incinération à ciel ouvert

Barrière	Remède
.1. Recherches de terrains adéquats (sol imperméable loin des habitations, voies d'accès rapides etc …)	*Etude d'impact pour l'implantation des décharges contrôlées *Gestion rigoureuse des CET *Mise en place de centres d'enfouissement techniques à travers le territoire national.
2.Accès non contrôlé	Meilleures pratiques de gestion (clôture, gardiennage, contrôle des déchets, etc
3.Canalisation des Bio gaz formés	Dans les CET au stade de la réalisation, des bio gaz formés sont collectés et brûlés (torchères) *Utilisation des bio gaz comme source d'énergie.
4.Tri en amont (à partir de la ménagère	*Sensibilisation *Mettre à la disposition des ménagères des sachets de couleur différentes pour le tri.
5. Ramassage	*Rentabiliser et renforcer les moyens de

	collectes *Ramassage des déchets à des horaires convenables.

4) <u>DÉCHETS COMMERCIAUX</u>

A) Composition des déchets

- Aucune étude n'a été faite concernant ce type de déchets.
- D'une manière générale, les déchets commerciaux sont considérés comme les déchets municipaux et sont donc collectés et mis en décharge comme des déchets ménagers.

B) Barrières à l'élimination d'incinération à ciel ouvert

Barrière	Remède
1. Aucune distinction	*Réglementation juridiquement contraignante. *Sensibilisation.
2. Pas de tri	*Faciliter et encourager les tris * Mettre les moyens à la disposition des concernés pour faciliter le tri.
3. Décharges spécifiques à ce type de déchets	*Ouvrir des décharges adéquates.
4. Quantité insuffisante pour justifier la collecte	*Prévoir des collectes périodiques.
5. Moyens de collecte non spécifiques.	*Mettre les moyens adéquats de collecte de ces déchets.

C) Documents politiques Spécifiques

- Interdire la mise en décharge de ce type de déchets avec les déchets ménagers.
- Selon le principe pollueur –payeur, une taxe sur les déchets est instaurée en Algérie.
- L'Algérie est dotée d'une réglementation concernant la gestion de déchets solides.
- Un programme interministériel, sur la gestion des déchets solides, et donc des déchets commerciaux, a été initié et mis en application.

D) Minimisation des déchets/ Stratégies de Diversion

Les emballages utilisés en Algérie proviennent en majeure partie de l'importation. Actuellement, il n'existe pas de structures qui utilisent des techniques de réduction de ces déchets.
Certains emballages sont récupérés par le recyclage (cartons, plastiques, emballage métallique).

E) Alternatives disponibles à l'incinération à ciel ouvert

Comme déjà proposé plus haut, prévoir des cycles de collectes périodiques, et l'ouverture de décharges publiques appropriées à ce type de déchets.
Un tri, avec possibilité de recyclage sur site peut être envisagé pour la réduction des déchets.

F) Pratiques d'incinération :

Dans ce domaine, l'Algérie n'a pas d'expérience car aucune pratique d'incinération n'a été mise en œuvre.

G) Techniques d'Amélioration

Il n'existe pas d'incinération de déchets de forêt à ciel ouvert programmées. Ce type de déchets se dégradent naturellement

A) <u>Commentaires</u>

Les déchets sont généralement volumineux, donc il est plus facile de procédé a un tri. Prévoir des unités de récupération permettant de réduire ces déchets.

Ce type de déchets nécessite une gestion demandant des moyens spécifiques.

5-DÉCHETS DE CONSTRUCTION ET DE DÉMOLITION

A) Composition des Déchets

Les déchets de construction et de démolition se composent principalement de béton, d'acier, de brique et à un degrés moindre de verre et de bois.

Des sites appropriés existent à travers le territoire Algérien. Ces déchets sont concassés et utilisés dans le revêtement des routes.

B) Barrières à l'élimination d'incinération à ciel ouvert

Barrière	Remède
1. Manque de moyens de recyclage	*Encourager l'ouverture de centres de recyclage
2. Manque de décharges appropriées	*Aménager des espaces appropriés pour recevoir ces déchets
3. Pas de tri avant la mise en décharge	*Encourager les entrepreneurs à réaliser un tri en amont.
4. Technique de demolition	*Utilisation des techniques modernes de démolition (explosifs, etc …)
5. Recyclage	*Valoriser les produits recyclés (Gravats pour revêtement, acier, bois)

C) Documents spécifiques

- Inciter les investisseurs dans le recyclage de ces déchets, en valorisant les différents produits.
- Prendre des dispositions réglementaires pour le contrôle et le processus de démolition et de mise en décharge.

D) Minimisation des déchets/ Stratégies de Diversion

- Lors des démolitions de constructions, une séparation des divers composants (béton, briques, acier, bois, verre, etc…) se fait généralement sur site. Les produits récupérés sont réutilisés.

E) Alternatives disponibles à l'incinération à ciel ouvert

En Algérie, cette catégorie de déchets ne subit pas d'incinération à ciel ouvert.

F) Techniques d'incinération- peuvent varier d'une région à une autre

- Aucune incinération

G) Techniques d'Amélioration

- Aucune incinération

H) Variations régionales

I) Commentaires

- Une grande partie des déchets de démolition, en raison de leur valeur ajoutée ; est réutilisée, dans divers secteurs notamment dans les travaux publics et matériaux de construction.
- Il existe des sites spécialement aménagés pour recevoir ces déchets.

6- EQUIPEMENTS MILITAIRES/MUNITIONS

7- INCINÉRATION À CIEL OUVERT DES DÉBRIS POST CATASTROPHIQUES

A) Composition des déchets

- Déchets de démolition d'habitations (dans le cas d'un séisme).
- Déchets provenant d'inondations (boues, détritures de toutes sortes).
- Explosions accidentelles d'usines (hydrocarbures, produits chimiques et le bâti).

B) Barrières pour l'élimination de l'incinération à ciel ouvert

Barrière	Remède
1 Réglementation .et manque de vigilance	*Prévoir une réglementation stricte et contraignante permettant une vigilance plus accrue.
2. Pas de contrôle et de suivi	*Mettre en place un comité intersectoriel pour le contrôle et le suivi. *Mettre en place un comité de contrôle et de suivi, au niveau des installations à haut risque pour une bonne application des textes en vigueur.
3. Manque de communication	*Equipements de brigades d'intervention en matériel adéquat.
4. Manque de moyens d'intervention rapide	*Education hygiène et sécurité et information sur les risques, vulgarisation des conduites à tenir en cas de catastrophe.
5. Manque de plan de prévention et exercices de stimulation.	*Chaque secteur doit avoir un plan d'intervention rapide. *Prévoir des exercices de stimulation annuellement.
6. Formation de personnel	*Former des spécialistes à cet effet (Protection civile, santé, forces armées).

C) Documents politiques spécifiques

- Application de la législation en vigueur relative à la protection des forêts (décret de 1987).

D) Minimisation des déchets/stratégie de diversion

- Prévention : agir en amont
- Respect des normes de sécurité (construction et matériaux)
- Prévoir des brigades d'intervention rapide
- Gestion rationnelle des déchets après une catastrophe.

E) Alternatives disponibles à l'incinération à ciel ouvert

- Récupération et recyclage le plus large possible.

F) Techniques d'incinération et attributs

G) Techniques d'Amélioration

F/G/H Techniques d'incinération/d'amélioration/ commentaire

- Dans le cas de l'Algérie, les déchets provenant des catastrophes, sont pour certains recyclés et récupérés et pour le reste mis en décharge.

8- FEUX ACCIDENTELS

A) Composition des déchets

Bois, papier textiles, plastiques, essence, vernis, asphalte. Le pourcentage dépend du type d'objets en feu (Ex : maisons, commerce, agricoles, constructions publiques et voitures et autres véhicules

B) Barrière à l'élimination d'incinération à ciel ouvert

Barrière	Remède
1. Manipulation imprudente de feux	*Education et information sur les risques.
2. Equipements électriques défectueux et installations électriques vétustes.	*Norme de sécurité des produits *Contrôle périodique des installations.
3. Accidents de la circulation.	*Mesures de prévention et campagnes de sensibilisation.
4. Accidents dans l'industrie	*Respect des normes de sécurité *Contrôle périodique des équipements.
5. Activités criminelles	*Surveillance et gardiennage *Vigilance et mesures de sécurité.

C) Documents politiques spécifiques

- Loi sur les risques majeurs et les grandes catastrophes (juillet 2003).

D) Minimisation des déchets

- Intervention efficace et rapide des équipes d'intervention

E) Alternatives disponibles

Aucune

F) Techniques d'incinération

Pas d'incinération

G) Techniques d'amélioration

- Former et sensibiliser et éveiller les consciences
- Améliorer les mesures d'intervention
- Renforcer les contrôles de sécurité.

H) Commentaires

- Dans le cas de l'Algérie, après un feu accidentel, les déchets générés sont mis en décharge et ne subisse aucune incineration.

COMMENTS SUBMITTED BY MR. PATRICK FINLAY (CANADA)

-----Original Message-----
From: Ternan,Sarah [NCR] [mailto:Sarah.Ternan@ec.gc.ca]
Posted At: 16 June 2004 22:47
Posted To: SSC
Conversation: Canada Comments RE: Draft Guidelines and Guidance on BAT and BEP
Subject: Canada Comments RE: Draft Guidelines and Guidance on BAT and BEP
Importance: High

On behalf of Patrick Finlay, Canada's member of the Stockholm Convention Expert Group on Best Available Techniques (BAT) and Best Environmental Practices (BEP), please find below comments and information for various source sector draft BAT/BEP documents for consideration.

Regards,

Sarah Ternan
for
Patrick Finlay
Environment Canada

Section V.A.1 - Waste Incinerators: Medical, Hazardous and Sewadge Sludge

Under Section 3.3.1.2 there should be a distinction made between chlorinated and non-chlorinated wastes when discussing temperatures. Temperatures of 850-1000 C can be considered adequate for destruction of non-chlorinated hazardous waste; while 1000-1200 C is considered adequate for destruction of chlorinated hazardous waste, i.e. dioxins and furans, PCBs and HCB. This issue is raised as these guidelines identify "pass through" as one source of unintentional POP release.

Also - for consideration by the authors/country leads for both the document noted above and section V.A.2 (Medical Waste incinerators) - Canadian emission limits for the above designated sources can be found in the attached files (Canada-wide Standards for Dioxins and Furans, May, 2001 and accompanying stack test requirements).

http://www.ccme.ca/initiatives/standards.html?category_id=50#23

<<d_f_incin_stk_tst_rqmts_e.pdf>> <<d_and_f_standard_e.pdf>>

Section VI.C Residential Combustion Sources
Additional clarification would be beneficial for Tables 1 & 3. A reference or notation of the source of the emission factors should be included for these tables.
In Table 3 - it's suggested that further explanation be included to better clarify the differences in the two sets of PCDD/PCDF release estimates.

For the section on recommendations, it is suggested that an annex of information sources relating to 'improved wood stoves' be compiled and included, as may be possible. Such a list of information sources could be useful for all countries (developed, developing and those with economies in transition) in developing their National Implementation Plans and associated Action Plans.

Section VI.E Firing installations for wood and biomass
Suggest that the recommendation in Table 3 regarding the primary measure "Increased residence time of flue gases upstream of the boiler" be further expanded and/or clarified.
Section V.C Production of Pulp
It's recommended that sections 1.3 and 2.2.1 be included in the BAT/BEP document for this source (in response to the question posed by the country lead/author). Additional information and details could be appended or included, as deemed appropriate to assist countries in the effective minimization/elimination of UPOPs from pulp production generally.

COMMENTS SUBMITTED BY PROF. MARAT ISHANKULOV (KAZAKHSTAN)

Dear colleagues,

My comments on the proposed variant of "Best Available Techniques – Best Environmental Practices (BAT-BEP) for Open Burning of Waste" text are as follows.

1. I think it advisable in Section 1,0 (General Guidance) to make a special note of whom the Guidance is addressed. In my opinion, it is most urgently needed by developing countries and countries with economies in transition. In these countries all forms of open burning are widely spread, frequently without any scientifically-based background.

Besides, the use of best techniques and best environmental practices in this field is a key to solving social problems of local communities and promoting their democratization. For this reason I highly appreciate this very section - «open burning» of the Guidance on BAT & BEP.

2. The classification of open burning types is not perfect yet in spite of all efforts to improve it.

Though this part of the Guidance BAT and BEP considers only open burning of **waste**, item 4.3 addresses not only waste. Such categories as «crude oil» and «oil well» do not fall into waste. Military Ordinance/Munitions (item 4.4) are not waste as well.

3. I propose my own view of the problem (table).
Titles of classification categories (upper row) of the table are relative. We can name them not as types, class, category, etc. as it is done in the proposed variant. What is important is their hierarchy, consistency, complete account of all open burning categories.

4. I have no any additional proposals on sections 2.0, 3.0 and 4.0. Different prevention methods can be proposed for inclusion into them (prevention measures), technological control approaches to the by-products emission.

Table

Categories of open burning of production and consumption waste, natural resources and products as sources of POPs by-products

Type	Subtype	Kind	Class	Subclass	Category
Open burning of production and consumption waste, Natural resources, products in conditions favoring formation of POPs by-products (low	Open burning of production and consumption **waste**	Intended burning	Homogeneous	Vegetation	*1. Agricultural/crop residue* *2. Land Clearing Debris).* *3. Yard Waste(vegetation).* *4. Burning of pressed dung for cooking and heating purposes*
				Animal	*5. Burning of animal carcasses*
				Mineral (organo-mineral)	*6. Burning of sewer sludge* *7. Waste water sediments*
				Artificial (organic synthesis products)	*8. Agricultural Plastic* *9. Tires.* *10. Cable.*

Type	Subtype	Kind	Class	Subclass	Category
temperatures, chlorine and organic substances presence)			Mixed		*11. Household waste.* *12. Medical waste.* *13. Industrial non-hazardous waste.* *14. Construction/Demolition/Post disaster Debris* *15. Automobile shredder fluff* *16. Electronics waste*
		Unintended burning	Mixed		*17. Landfills/dumps* *18. Construction debris*
	Open burning of **natural resources**	Intended burning	Homogeneous	Vegetation	*19. Savanna and forest*
				Mineral (organo-mineral)	*20. Petroleum gas flares at gas and oil fields in chloride class landscapes (ocean coast, sea and lake shores).*
		Unintended burning	Homogeneous	Vegetation	*21. Forest and grassland fires.*
				Mineral (organo-mineral)	*22. Crude Oil.* *23. Oil well/Oil Spills*
	Open burning of products	Unintended burning	Mixed		*24. Vehicle fires* *25. Fires in production areas and dwellings.*
		Intended burning	Mixed		*26. Fireworks* *27. Military Ordinance/Munitions.*

COMMENTS SUBMITTED BY DR. HEIDELORE FIEDLER (UNEP)

Dear Maria Cristina,

I apologize for the delay with submission of my comments to the draft guidelines. Nevertheless, I hope that they will find entry into the existing guidance.
My comments includes additional information for amendment of the present drafts and specific comments on individual documents and some comments related to several documents. For the first group of additional comments, I kindly ask you to forward the documents attached to this e-mail to the respective coordinators of documents; however, it should be taken into account that all papers issued by publishing companies are subject to copyright and cannot be put on the WebPage.

Kind regards,
Heidi Fiedler

General comments on style and inconsistencies:
- Apply abbreviations and acronyms as defined in the Stockholm Convention throughout all documents, e.g., PCDD/PCDF (and not PCDD/Fs, PCBs, etc.) throughout all text;
- Note: the terms "dioxins" and "furans" are not used in the Stockholm Convention and, more important, they are wrong since these terms refer to other chemicals and not to PCDD and PCDF;
- Note that UPOP(s) is not an agreed acronym. Personally, I do not like it. If considered to introduce an acronym for unintentional POPs, then it should be u-POPs;
- Insert a blank between numbers and units (including %, °C);
- Volumes have to be harmonized: the European and Asian authors use Nm^3 (normal cubic meter) whereas the Canadian use Rm^3 (Reference cubic meter). Since Nm^3 is the wider used standardization (besides 25 EU countries also in the Aarhus POPs Protocol), I suggest to take Nm^3 as the basis for these guidance documents;
- Commonly used concentrations should be used throughout all documents: Stack concentrations should be given in ng TEQ/Nm^3, ash or solids concentrations in ng TEQ/kg, concentrations in liquids in pg TEQ/L;
- Limits of detection are not interesting to the chemists. Hat is meant here is limit of quantification (LOQ and not LOD);
- The term "level" cannot be used when numeric values are given. 0.1 ng/Nm^3 is a (mass) concentration and not a level. Subsequently, we have to talk about limit concentrations or limit values. If such numbers are legally binding or recommended does not matter. A law/directive/ordinance will make it legally binding whereas a guideline/orientation is only a reference and not legally binding;
- All acronyms have to be introduced in text, including chemicals such as SO2, NH3, etc. Preferentially, each document should have a list of acronyms used, which may later be summarized into one list;
- the apostrophe cannot be used when a plural is meant, e.g., POP's;
- ppm is not a SI unit and should not be used;
- AMESA is a trade name and should not be used as a generic term when referring to a continuous sampling method (there are others available that serve the same purpose; e.g., DioxinMonitoringSystems);

Ref.: Consideration of Alternatives:
I recognize that the text provided to define the borderlines of "alternatives" as agreed and requested in the mentioned conference call were not included into the draft. I kindly ask the coordinators to consider inclusion.

Ref.: Residential combustion sources
This document needs much input since there is almost no information included on PCDD/PCDF. The references given in the Toolkit for category 3 may be consulted. When listing various firing installations, categorization has to be made as to the type of the fuels especially to the physical state

(solid, liquid, gaseous) and to its purity. Addition of wastes to the fuels results in higher release of PCDD/PCDF which has been demonstrated in solid residues and stack emissions.
I attach a publication summarizing some of the important findings: Lavric et al. (2004): Dioxin levels in wood combustion-a review. Biomass and Energy. The list of references should be taken into account for further reading.

Biomass-Wood
:ombustion_2003.p..

Ref.: Firing installations for wood and other biomass
See the above paper by Lavric for additional information.
Further reading include Materialien 172 of BUWAL <http://www.umwelt-schweiz.ch/imperia/md/content/luft/fachgebiet/f/feuerungen/10.pdf>
Mohn et al. <http://www.empa-ren.ch/Internet-Files/Programm/Aktuelles/aktualitaeten/Status-Seminar/pdf-files/Mohn-J.pdf>
Marutzky <http://www.wki.fraunhofer.de/projekte/abschluss08206.pdf>
Dissertation <http://www.biblio.tu-bs.de/ediss/data/20010723a/20010723a.pdf>
Finally, this presentation contains some interesting technical details
<http://www.wtb.tue.nl/woc/ptc/education/4S600/Section4-combustionprinciples+emissions.pdf>

Additional reading:
- the inventory reports of Landesumweltamt Nordrhein-Westfalen on behalf of the EU provide information on performances of European plants, especially as additional information to the ferrous and non-ferrous metal sectors - both are available for download from the EU dioxin Website <http://europa.eu.int/comm/environment/dioxin/>:

LUA (1997): Identification of Relevant Industrial Sources of Dioxins and Furans in Europe. Materialien No. **43**. Landesumweltamt Nordrhein-Westfalen, Essen, 1997

LUA (2000): The European Dioxin Emission Inventory - Stage II. Final Report December 2000. Materialien No. 59. Landesumweltamt Nordrhein-Westfalen, Essen 2001

Other remarks:
- Subsequently to the finalization of the documents, I suggest to take out of the individual documents issues that are common to many of the documents. This should be done to first save space and make the individual guidance better understandable and second to avoid contradictory statements/requirements. Examples include: handling of ashes from thermal processes, reporting and documentation, sampling and analysis;
- in the same way, all flue gas cleaning technology can be summarized and listed in one document and afterwards referred to in the other documents; e.g., cement and waste incineration documents

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Seite: 20
[k1] Information from the LVOC BREF p. 296
Seite: 20
[k2] The term seems unclear “staging” in this context, it would be helpful to specify it.
Seite: 20
[k3] Regulation in many countries is not congruent with BAT.
Seite: 21
[k4] From our experience, this is to general.
Seite: 21
[k5] We would recommend to update these data, as they seems to be quite old