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1992 ALCOA ENVIRONMENTAL AUDIT REPORT

Prepared for the
Audit Committee of Alcoa's
Board of Directors
by the
Alcoa Environmental
Audit Group

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To the members of the Audit Committee:

Alcoa Environmental Audit System

1992 Overview:

Aluminum Company of America broadened the objectives, scope, and location coverage of its Environmental Audit System in 1992. System changes, which included the development of an audit scoring process, a formal reporting process, and self certification procedures, were implemented to support the revised audit objectives. A full-time audit staff was one of the organizational changes made to address the expanded audit schedule and enhance the consistency and independence of audits. Audit protocol books were revised to provide an increased focus on environmental management systems.

During 1992, 12 domestic and five international locations were audited. Eight of the 12 domestic and all of the international audited locations participated in a pilot evaluation of the revised protocol books and new scoring system during the fourth quarter. A list of these locations is shown in Appendix A. Although "unofficial" audit scores were assigned to these locations, the principal intent of piloting the scoring system was to identify process improvement opportunities. The new scoring system will be instituted in January 1993. This will coincide with the full-time audit staff being available to lead and review all audits.

As in the past, all locations audited in 1992 were required to develop corrective action plans for significant audit findings. Progress against plans for those locations which participated in the pilot scoring system will be monitored in 1993 via the Business Unit self-certification process.

Objectives, Scope and Coverage:

The objectives of Alcoa's Environmental Audit System were updated in 1992 to reflect the needs of Alcoa management. The objectives of the audit system are threefold: to provide an independent assessment of the environmental management systems and major environmental problems of Alcoa locations worldwide by verifying compliance with Corporate and government requirements; to improve the environmental programs within Alcoa through system analysis, technology transfer, and the sharing of information; and to identify situations that have the potential to develop into future environmental problems.

The scope of Alcoa's Environmental Audit System was expanded and now includes the following environmental disciplines: air, water, solid and hazardous wastes, toxic substances such as PCBs and asbestos, waste minimization, land management, and the prevention/control of chemical releases. Under the new audit system, the management systems associated with each of these disciplines are examined during the course of an audit. Verification techniques such as inspections, interviews, and document reviews are then employed to determine whether the management systems are adequate to ensure compliance with all applicable laws and regulations as well as Corporate, Business Unit, and location policies, standards, guidelines, and best practices.

Locations covered under the Environmental Audit System now include all active and inactive operating, warehouse, and transportation facilities, worldwide, in which Alcoa has majority ownership and/or operating control. Initially, all such facilities will be audited a minimum of once every three years. A longer frequency (e.g., five

years) may be recommended by the audit manager for facilities which have been audited and are assessed to be low risk facilities. Facilities receiving an unsatisfactory audit score or those which fail to implement corrective action plans from a previous audit will be audited within one year. Audit schedules for 1993, 1994, and 1995 are shown in Appendices B, C, and D respectively.

System Changes:

An environmental audit scoring system was developed to provide an objective assessment of a location's environmental management systems. The scoring system, which links directly to the revised protocol books, addresses 44 specific topics dealing with regulatory requirements, corporate policies/standards, and good environmental practices. Audit teams are required to evaluate the management systems associated with each topic area to determine whether the associated system is capable of ensuring compliance with applicable governmental laws/regulations as well as Corporate, Business Unit, and location policies, standards, guidelines, and best practices. Each topic area and associated management system is assigned one of four scores: "exceeds requirements," "meets requirements," "generally meets requirements," or "requires substantial improvement." Scores are then tabulated to determine an overall "satisfactory" or "unsatisfactory" location audit score. A satisfactory location audit requires that less than 10% of the management systems associated with the audit topics be in the "Requires Substantial Improvement" category and that the combined categories of "Exceeds Requirements" and "Meets Requirements" are greater than 30% for a location's first audit. This 30% minimum score will increase to 60% for the location's second audit.

Beginning in 1993, written quarterly reports and semi-annual presentations will be provided to the Audit Committee of the Board of Directors by Alcoa's Senior Vice President of Environment, Health, and Safety. Business Unit Presidents may be asked to present to the Audit Committee for one of three purposes: to provide an overview of the environmental management systems and associated results for locations with exemplary audit performance; to review the circumstances associated with a location which receives two successive unsatisfactory audits; or to explain the circumstances associated with a location which fails to implement corrective action plans for significant audit findings from a previous audit.

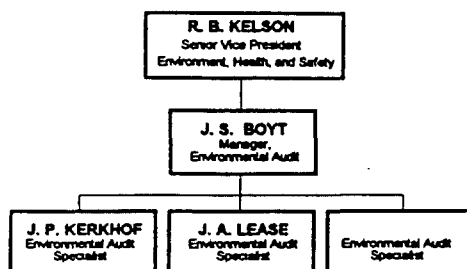
A self-certification process designed to facilitate implementation of a location's corrective action plans was also developed. In this process, Business Unit Presidents or their designated representatives are asked twice a year to document the status of corrective action plans for the significant environmental audit findings. All locations audited during the fourth quarter of 1992 will participate in this process.

Organizational Changes / Human Resources:

The audit schedule has been expanded from an average of 11 audits/year in recent years to nearly 40/year, as reflected in the 1993-1995 audit schedules. Also, Alcoa businesses have requested enhancements of the independence and consistency of audits. These needs were addressed, in part, through the creation of a new environmental audit organization. The new organization, which reports directly to Alcoa's Senior Vice President of Environment, Health, and Safety, consists of four full-time positions: one audit manager and three audit specialists. The audit manager and two of the three audit

specialist positions were filled in the fourth quarter of 1992. Each of the incumbents, who will begin their new assignments in January 1993, are experienced Alcoa environmental professionals. A candidate has been offered the third audit specialist position. The Environmental Audit Organization is shown in the following chart:

ALCOA ENVIRONMENTAL AUDIT ORGANIZATION



In the past, environmental professionals from the central environmental resource unit and plant locations were assigned to lead individual audits. The three audit specialists will assume the team leadership role for all audits beginning in 1993. Audit team members will continue to be selected primarily from the central environmental resource unit and plant location environmental staffs for individual audits. External environmental audit consultants will also be utilized as team members in the new audit process.

Several practices associated with team membership, training, and team leader roles have been adopted to further facilitate independent and consistent audits. Audit independence will be enhanced by limiting the number of team members from the same Business Unit as the location being audited and excluding anyone who may have worked at the audited location in recent years. In addition to having the audit specialists serve as the team leaders for all audits, two other practices will be implemented to facilitate audit consistency.

First, only trained and experienced auditors will be used to conduct audits. Secondly, the significant findings, recommendations, and audit scores from each audit will be reviewed by the audit manager, the audit specialists, and the Senior Vice President of Environment, Health, and Safety before reports are issued to the audited location.

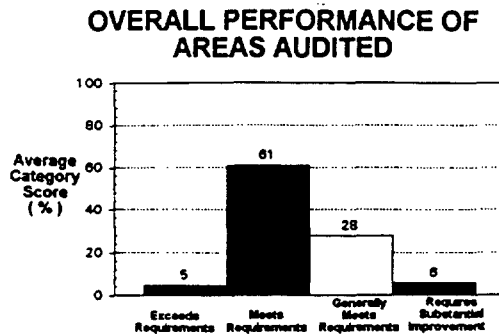
Protocol Books:

Audit protocol books for each of the environmental disciplines covered under the audit system (e.g., air, water, solid and hazardous waste, etc.) were modified/developed. The new protocol books were written to reflect the focus on the identification and effectiveness verification of a location's environmental management systems. Regulatory requirement summaries were added to the protocol books.

1992 Pilot Scoring System Results:

During the fourth quarter of 1992, eight domestic and five international environmental audits were conducted using the newly developed audit procedures. The pilot scoring system was applied at each location to evaluate potential problem areas prior to its implementation in 1993. Twelve of the 13 facilities audited received a satisfactory rating. One domestic location exceeded the 10% limit of audit topics in the "Requires Substantial Improvement" category and did not obtain the required 30% percent in the combined categories of "Exceeds Requirements" and "Meets Requirements". The potential environmental impact associated with the audit findings from this location is minimal. The "unsatisfactory" score is due primarily to the failure of existing environmental management systems to adequately address regulatory requirements. These regulatory non-compliance items should be easily corrected in early 1993.

The performance of the 12 facilities receiving a satisfactory audit compared to the criteria in the audit protocol books is illustrated in the following chart:



Education and Training:

Twenty-nine Alcoa of Australia employees participated in two separate environmental auditing skills and techniques training classes by Arthur D. Little, Inc. during the fourth quarter of 1992. This brings the total number of trained Alcoa environmental auditors to 65. The new environmental audit manager and environmental audit specialists will participate in a two-day Arthur D. Little training session entitled "Audit Team Leader Training" in the first half of 1993.

1993 Environmental Audit System Improvement Plans:

Several opportunities for system improvement were identified as a result of the pilot audits conducted in 1992. The audit protocol books, although significantly improved, require additional work. The management system understanding and verification approach used in Arthur D. Little's protocol books will be integrated into Alcoa's protocol books. Summaries of Alcoa's standards, guidance, and best practices documents will also be included.

This work is scheduled to be completed in the first quarter of 1993.

The audit scoring system approach and the associated criteria for what constitutes a satisfactory audit have proven to be satisfactory and will be maintained. The scoring questions will be reevaluated in January 1993 to further enhance objectivity, worldwide applicability, and stronger linkage to Alcoa's audit protocol books.

A formal audit feedback process will be developed. This new process, which will be implemented concurrently with the first audit conducted in 1993, will seek to gather system improvement ideas from locations and Business Units involved in the audits and from team members.

Technology transfer/information sharing is a key objective of Alcoa's Environmental Audit System. To facilitate this objective, a process to communicate the best practices, benchmark management processes, success stories, and common areas of concern identified through the audit process will be developed and implemented in 1993.

R. B. Kelson
Senior Vice President
Environment, Health, and Safety

APPENDIX A

Pilot Audit Schedule (4th Qtr., 1992)

Plant	City	State	Country	Fourth Quarter 1992
ALCOA OF AUSTRALIA				<i>(R. F. Siagle)</i>
Hedges Gold			Australia	November
Kwinana	Kwinana		Australia	October
Pinjarra	Pinjarra		Australia	October
Wagerup	Wagerup		Australia	October
W.A. Mining			Australia	October
EXTRUSION & TUBE SYSTEM				<i>(R. A. Kocarta)</i>
Pinalco	Chandler	AZ	USA	December
Vernon	Vernon	CA	USA	October
INDUSTRIAL CHEMICALS				<i>(M. J. Schroter)</i>
Arkansas	Bauxite	AR	USA	October
Vidalia	Vidalia	LA	USA	December
NORTHWEST ALLOYS				<i>(E. L. Sandman)</i>
NW Alloys	Addy	WA	USA	November
PRIMARY METALS				<i>(R. C. Rowe)</i>
Permtech	Graham	NC	USA	December
Rockdale	Rockdale	TX	USA	December
Wenatchee	Wenatchee	WA	USA	October

APPENDIX B

Alcoa Environmental Audit Schedule (1993)

Plant	City	State	Country	1993
AEROSPACE - COMMERCIAL ROLLED PRODUCTS				<i>(L. P. Hessey)</i>
Structural Laminates	Pamassus	PA	USA	June
ALCOA OF AUSTRALIA				<i>(R. F. Slagter)</i>
Pt. Henry	Pt. Henry		Australia	October
Portland	Portland		Australia	October
ALCOA COMPOSITES				<i>(D. L. Rittichier)</i>
Bonded Technology	Cromwell	CT	USA	July
ALCOA ELECTRONIC PACKAGING				<i>(K. W. Blevins)</i>
Alcoa Electronic Pkg.	San Diego	CA	USA	September
ALCOA FUJIKURA				<i>(R. H. Barton)</i>
Del Rio	Del Rio	TX	USA	November
Houston	Houston	TX	USA	November
Spartanburg	Duncan	SC	USA	December
ALCOA NEDERLAND				<i>(H. A. J. Bemelmans)</i>
Alcoa Nederland	Drunen		Netherlands	July
Alumet			Netherlands	April
Burgerhout	Assen		Netherlands	April
Intal	Geldermalsen		Netherlands	July
Intransit			Netherlands	July
Allpro			Netherlands	July
BAUXITE & ALUMINA				<i>(A. C. Roemhild)</i>
Suralco	Paranam		Suriname	March
Suralco	Moengo		Suriname	March
CLOSURE SYSTEMS INTERNATIONAL				<i>(T. J. Leveque)</i>
H-C Industries	Olive Branch	MS	USA	February
EXTRUSION & TUBE SYSTEM				<i>(R. A. Kocerha)</i>
Tifton	Tifton	GA	USA	May
FOIL PRODUCTS				<i>(K. R. McElheny)</i>
Lebanon	Lebanon	PA	USA	June

APPENDIX B

Alcoa Environmental Audit Schedule (1993)

Plant	City	State	Country	1993
FORGINGS & CASTINGS				<i>(R. S. Hughes)</i>
Texas Eng. Products	El Paso	TX	USA	February
INDUSTRIAL CHEMICALS				<i>(M. J. Schreier)</i>
Alcoa Kasei	Naoetsu		Japan	August
Moralco	Iwakuni		Japan	August
PACKAGING MACHINERY				<i>(R. A. Glah)</i>
Ragsdale	Englewood	CO	USA	August
PRIMARY METALS				<i>(R. C. Rawe)</i>
Paradise Point	Norfolk	VA	USA	August
Specialty Metals	New Kensington	PA	USA	June
RIGID PACKAGING				<i>(G. E. Bergeron)</i>
Alcoa Recycling	Knoxville	TN	USA	May
STOLLE CORPORATION				<i>(D. Snyder / J.H. Hopkins)</i>
ABP Stuarts	Stuarts Draft	VA	USA	August
ABP Denison	Denison	TX	USA	November
Caradco	Rantoul	IL	USA	August
Alcoa Vinyl	Springboro	OH	USA	April
WIRE, ROD AND BAR				<i>(T. S. Mock)</i>
Alcotec	Traverse City	MI	USA	September
Massena	Massena	NY	USA	May
MISCELLANEOUS				
Railroads (4)	Pittsburgh	PA	USA	July

APPENDIX C

Alcoa Environmental Audit Schedule (1994)

Plant	City	State	Country	1994
AEROSPACE - COMMERCIAL ROLLED PRODUCTS				(L. P. Hassay)
Davenport	Davenport	IA	USA	September
ML Systems	Vahalla	NY	USA	July
Southco	Atlanta	GA	USA	October
Aerospace Center	Irvine	CA	USA	February
ALCOA COMPOSITES				(D. L. Rittichier)
Composite Structures	Monrovia	CA	USA	May
Fibertek	Springville	UT	USA	August
ALCOA FUJIKURA				(R. H. Barton)
AFL-Acuna	Acuna		Mexico	January
AFL-Acuna	Acuna		Mexico	January
AFL-Acuna	Acuna		Mexico	January
AFL-Acuna	Acuna		Mexico	January
AFL-Acuna	Acuna		Mexico	January
AFL-Acuna	Acuna		Mexico	January
AFL-Acuna	Acuna		Mexico	January
ALCOA NEDERLAND				(H. A. J. Bemelmans)
Extrudal SA	Valls		Spain	November
Extruded Products	Swansea		Wales	July
BAUXITE & ALUMINA				(A. C. Roemhild)
Minerals of Jamaica	Clarendon		Jamaica	August
Pt. Comfort	Pt. Comfort	TX	USA	February
Minerals of Jamaica	Woodside		Jamaica	August
CLOSURE SYSTEMS INTERNATIONAL				(T. J. Leveque)
Deutschland	Worms am Rhein		Germany	July
Capsulas Metalicas	Barcelona		Spain	November
H-C Industries	Crawfordsville	IN	USA	November
EXTRUSION & TUBE SYSTEM				(R. A. Kocatha)
Tube Specialties	Charlotte	NC	USA	October
Halethorpe Extrusions	Baltimore	MD	USA	April
FORGINGS & CASTINGS				(R. S. Hughes)
Forges de Bologne	Bologne		France	May
Cleveland	Cleveland	OH	USA	December
B&C Research	Barberton	OH	USA	December

APPENDIX C

Alcoa Environmental Audit Schedule (1994)

Plant	City	State	Country	1994
INDUSTRIAL CHEMICALS				(M. J. Schreier)
Alcoa Chemie	Ludwigshafen		Germany	May
Alcoa Chemie	Rotterdam		Netherlands	May
Dalton	Rocky Face	GA	USA	January
Mobile	Mobile	AL	USA	January
Alcoa Specialty Chem.	Nashville	TN	USA	June
LATIN AMERICA				(A. Belda)
ALUSUD	Santiago		Chile	January
ALUSUD	Buenos Aires		Argentina	January
PACKAGING MACHINERY				(R. A. Glah)
Randolph	Randolph	NY	USA	June
PRIMARY METALS				(R. C. Rowe)
Badin	Badin	NC	USA	April
RIGID PACKAGING				(G. E. Bergeron)
Alcoa Generating	Newburgh	IN	USA	October
Alcoa Manufacturing	Swansea		Wales	July
Kobe	Moka		Japan	August
Tennessee	Alcoa	TN	USA	March
Warrick	Evansville	IN	USA	October
STOLLE CORPORATION				(D. Snyder / J.H. Hopkins)
Cellwood	Gaffney	SC	USA	March
Spec. Oregon	Phoenix	OR	USA	April
Arctek	Gettysburg	OH	USA	September
Dayton Ext. Prod.	Springboro	OH	USA	November
Drew	Drew	MS	USA	February
ABP Princeville	Princeville	IL	USA	September
MISCELLANEOUS				
Lancaster	Lancaster	PA	USA	June
Vanexco	Vancouver	WA	USA	August

APPENDIX D

Alcoa Environmental Audit Schedule (1995)

Plant	City	State	Country	1995
AEROSPACE - COMMERCIAL ROLLED PRODUCTS				<i>(L. P. Hassey)</i>
Kobe AKTP	Davenport	IA	USA	April
ALCOA OF AUSTRALIA				<i>(R. F. Slagle)</i>
Booragoon	Booragoon		Australia	July
Hedges Gold			Australia	July
Kwinana	Kwinana		Australia	July
Pinjarra	Pinjarra		Australia	June
Wagerup	Wagerup		Australia	June
W.A. Mining			Australia	June
ALCOA COMPOSITES				<i>(D. L. Rittichier)</i>
Astech	Santa Ana	CA	USA	February
Sphinx Mfg.	Los Angeles	CA	USA	February
ALCOA FUJIKURA				<i>(R. H. Barton)</i>
Dixie Wire	Nashville	TN	USA	May
AFL-Stribel	Frickhausen		Germany	May
AFL-Stribel	Dundalk		Ireland	May
AFL-Piedras	Piedras		Mexico	March
AFL-Piedras	Piedras		Mexico	March
AFL-Monterey	Monterey		Mexico	March
San Antonio	San Antonio	TX	USA	February
ALCOA NEDERLAND				<i>(H. A. J. Bemelmans)</i>
Kofem	Scekesfehervar		Hungary	May
ALCOA SOUTH CAROLINA				<i>(W. F. Cochrane)</i>
Dataw	Dataw	SC	USA	March
BAUXITE & ALUMINA				<i>(A. C. Roemhild)</i>
Tembladora	Port of Spain		Trinidad	January
CLOSURE SYSTEMS INTERNATIONAL				<i>(T. J. Leveque)</i>
Richmond	Richmond	IN	USA	October
Shibazaki	Tokyo		Japan	March
EXTRUSION & TUBE SYSTEM				<i>(R. A. Kocerna)</i>
Lafayette	Lafayette	IN	USA	August
Pimalco	Chandler	AZ	USA	August
Tifton-Delhi	Delhi	LA	USA	November
Vernon	Vernon	CA	USA	December

APPENDIX D

Alcoa Environmental Audit Schedule (1995)

Plant	City	State	Country	1995
INDUSTRIAL CHEMICALS				<i>(M. J. Schreier)</i>
Arkansas	Bauxite	AR	USA	October
FL Meade	FL Meade	FL	USA	October
Vidalia	Vidalia	LA	USA	December
Alcoa Specialty Chem.	Lake Charles	LA	USA	April
LATIN AMERICA				<i>(A. Belda)</i>
Aluminum Plant	Pocos de Caldas		Brazil	February
Cable Plant	Cabo-PE		Brazil	March
Cotia Foundry	Cotia-SP		Brazil	March
ALCONOR	Itapissuma-PE		Brazil	March
Packing	Alphaville-SP		Brazil	March
Pinda Extrusion	Pindamonhangaba		Brazil	March
ALUMAR	Sao Luis		Brazil	April
Sorocaba Extrusion	Sorocaba-SP		Brazil	March
Cargovan	Valinhos-SP		Brazil	January
Cable Plant	Pocos de Caldas		Brazil	February
NORTHWEST ALLOYS				<i>(E. L. Sandman)</i>
NW Alloys	Addy	WA	USA	August
PACKAGING MACHINERY				<i>(R. A. Giah)</i>
Wiebe	Sidney	OH	USA	April
Machinery ST8	Sidney	OH	USA	April
PRIMARY METALS				<i>(R. C. Rowe)</i>
Permatech	Graham	NC	USA	November
Rockdale	Rockdale	TX	USA	September
Sandow Electric	Rockdale	TX	USA	September
Wenatchee	Wenatchee	WA	USA	September
STOLLE CORPORATION				<i>(D. Snyder / J.H. Hopkins)</i>
Stolle Pitt 3	Sidney	OH	USA	September
Diversified	Sidney	OH	USA	September
Memory Prod.	Sidney	OH	USA	November
Norcold	Sidney	OH	USA	November
MISCELLANEOUS				
Technical Center	AlcoaCenter	PA	USA	June