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ISO 14000 Environmental Management Systems Comparing USA and Japan: Proceedings of the GT-CIBER / JETRO Seminar, February 12, 1998

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ISO 14000 ENVIRONMENTAL MANAGEMENT SYSTEMS
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Excuse me. Could you please take your seats. We are about to begin.

DR: Good morning. My name is Darrel Richardson and I work for the Japan External Trade Organization, and I would like to welcome all of you to this morning's seminar. Firstly, I would like to introduce Mr. Shigifumi Ino. Mr. Shigifumi Ino is the current Chief Executive Director of JETRO Atlanta. He graduated from Rickell University's Law Department in 1967 and joined the Japan External Trade Organization (JETRO) the same year. During Mr. Ino's JETRO career he has held several international positions. He was the Director of JETRO Kuwait and of the Taran Trade Center. On his last assignment to the United States, Mr. Ino was JETRO San Francisco's Deputy Director General. Mr. Ino.

SI: Thank you very much - so kindly introduction Mr. Richardson. Anyway I would like to first thank everyone for coming so early this morning to this exact briefing seminar on the ISO 14000, our standard of Environmental Management Systems. Today's seminar is the second in the city's following the one held at Georgia Tech at the end of October last year, and with the growing liberalization of international trade result in, in the increase is of doing business across borders, there is now an extremely high level of interest in industrial standards. Also, we Japan's are growing industrial corporation with America and with countries of Europe there is a high level of interest from these countries in Japan industrialization standardization policies, as well as the efforts of Japanese companies making to conform to the international standards. For these reasons I think that today's seminar is a very truly one and should prove to be worthwhile. Today we have invited three specialists from Japan and three local specialists to present their thought on the present state of ISO 14000 programs in both America and Japan. We truly hope that the exchange of ideas this morning will help lead to the promotion of mutual understanding of this system. I would like to thank Georgia Tech's Center for International Business Education and Research (CIBER), as well as the Center of International Standards and Quality, CISQ, for their cooperation in sponsoring today's seminar. We at JETRO Atlanta as well are also happy to continue providing our support for similar program in the future. Again thank you very much for continue, coming today. Thank you very much.

DR: Thank you Mr. I. Next, I would like to introduce Dr. David Clifton. Dr. David Clifton is Manager of the Center for International Stan-

dards and Quality (CISQ). With more than 23 years' experience in successfully managing and implementing economic development and research initiatives, he provides the leadership, direction and management for CISQ. Dr. Clifton earned his Ph.D. and M.B.A. in Economics from Georgia State University and his B.S. in Industrial Engineering from Georgia Tech. Appointed by Governor Zell Miller, Dr. Clifton have represented Georgia on the Southern Technology Council since 1993. Dr. Clifton.

DC: Thank you Darrel, you know Darrel is a very good moderator you know. He glanced up to make sure I was here, did you see that? Like where it that guy that's going to be here next. Well, let me welcome you all here to this ISO 14000 briefing and a special welcome to our guests from Japan who flew all the way here to share with us their initiatives and where they stand on 14000. I also want to recognize - we have a CISQ ISO 14000 discussion group. I see some members of our discussion group out there, and let me go ahead and tell you a little bit about what Georgia Tech and CISQ's doing. If you are in the 14000 area, we have a discussion group - meets about, I guess about every couple of months, it's industry, individuals interested in ISO 14000. If you are interested in getting on the mailing list for that, getting a notification of the meetings, I got a little sign up sheet here and I'll leave it outside and you can put your name and address and we'll put you on the mailing list. CISQ actually got started in 1991. Everyone's heard of the Coca-Cola Company. Coca-Cola and some other firms said, well what's going on overseas and Europe as far as international standards is very important. We need to have some capability here in the United States, and so they got with Georgia Tech and we actually started the Center in ISO 9000. How many companies - how many folks here have got ISO 9000 systems? Raise your hands. Okay so quite a few, okay. How many are in the process or have ISO 14000 systems? Alright. A lot of folks here have experience with 9000 and we have quite a few people are implementing 14000. I really want to give a special thanks to JETRO Atlanta for hosting this event and providing these facilities and I want to mention the fact that Hiro, who's been on our staff from Japan for the last year, has been a very good liaison person, between ourselves and Japanese, and that pretty much sums it up as for as my introduction. If there's any - any questions, I have some staff here. Folks want to raise your hands from both Cyber and CISQ. There's some Georgia Tech folks you can talk to them after the session. Anyway, glad you could make and we look forward and hope you get something from this meeting you can take home and use. Thank you very much.

DR: Thank you Dr. Clifton, next I would like to introduce Mr. Hito Acosusano. Mr. Hito Acosusano is presently a visiting scholar at

the Center for International Standards and Quality at Georgia Tech. He joined the Japanese Ministry of International Trade and Industry in 1985. Since then he has been assigned to various positions in the agency of Industrial Science and Technology the Machinery and Information Bureau, and the Consumer Goods Industries Bureau of Meeting. Mr. Sano.

HS: Good morning - Ladies and gentleman...(static)...but governmental industrial group as well. Today I speak to you introduction and the Japanese Industrial Standard System. And the developmental standards for environmental management system, and the certificate of registration system current situation of implementing ISO 14001 by the fiscal chart. Finally, I explain why Japan is so honest in taking up ISO 14001. Recent year markets becoming increasingly internationalized. And with product and distribution system being organize beyond national border. In brief, a borderless economic society is imagined. We speak with regarding to standardization activities. Standards cover more and more area and being used more widely. Speaking of standards, in what is called orthodox product standards, in what is called standards for example, shape of ... and size of credit card and .... sensitivity. But now, management system standard is that ....process and system oriented standards like ISO 9000, ISO 14000 emerging. Standards of management system is revolutionary and extended. They function up to organization themselves. In addition, it is important event is the conclusion of agreement, agreement which took effect in a July 1995. It is regarding two Tarado Technical area. And we, so we make fortitude to try to ensure transparent developing procedure of standards. And, countries including Japan had to make a commitment for a adaption of international standards. In Japan, international standardization is promoted at the National and Industry Association company level. Industrial standardization law also as JIS. What the JIS is ..... standard, just as ANSI in the U.S. which cover mining and manufactured product. These standards deliberated by JISC, Japanese Industry Standard Committee. And it is based on consensus of main users, users, manufacturers and as an interest to the party. The number of JIS is 8,161 by March 31, 1997. There is mostly two ways of JIS developing procedure. First, is the way that interest to the party request presenting a draft to Event Minister. The Event Minister inquires to .... by JIS. In JIS it is deliberated by one technical committees and their divisional council. Then JISC consider that the draft is national and appropriate. JISC report this to Event Minister. minister. The second way is Event Minister entrusted it to the most competent industrial association or .... society. In case of ISO 14003s, these standards were translated, entrusted to JSA, Japanese Standard Association, and the standards translated to Japanese. And we call then translated JIS. After the deliberated by

JISC, finally, Event Minister announced JISC in offshore .... It is important to announce before each deliberation start and that everybody could attend each deliberation, each deliberation. ISO 14003s was formulated in October 1996, and the recent year this JISQ 14040 was established on November of 1997. Among this JISQ 14001 specifies environmental management, requirement of environmental management for certification. And as a standard relating to guideline. ISO 14003s consist of 5-6 sub-committee, and two working group. At .... technical committee 207.... meeting was held in Kyoto in April 1997. That interest global worldwide focused on earlier publication of international standard related to SC3, SC4, SC5. SC3 is environmental rubber, SC4 environmental performance evaluation, SC5 lifecycle assessment. Kyoto ... meeting came to agreement that these standard should be released within two or three years. At the same time it is decided that with regard to introduction of ISO 14000 to small and medium size to enterprise. This policy should be finalized at the next .... meeting. In addition, the purpose of the enhancing corporation of .... standardization organization. Asia ISO 14000 Information Network - AIIN, was established...of the 10 countries. Today I distributed AIIN newsletter. If you need previous version you could obtain from worldwide site of Internet. This is Japanese conformity registration scheme. This scheme is similar to US scheme. In Japan Accreditation, Accreditation Board for conformity assessment, JAB, was established in November 1, 1993. The number on the registration bodies are created JAB is 19 bodies, and the number of auditor training bodies is 10 bodies, and the of auditor certification bodies - two bodies. More than 2,500 company worldwide have become certified with ISO 14001, with almost in half - half in Japan, UK, and Germany. This chart is tradition in the number of the registration why 14001. When ISO 14001 published the number is about 100, and it’s now reaches 618 places as of December 1997. We expected that - we expected that there will be about 700 cases by this end of fiscal year. This chart is - this chart is a accreditation of ISO 14001 per industry. About 80% of 680 places is in electric machinery and general machinery, and chemical technology sectors. There is a gross trend in service sector such as insurance and retail under government, local government. Next, this chart is accreditation of ISO 14001 per prefecture in Japan. The numbers depend, of course the number, the number depend on of farms located within each prefecture in Japan, but it is also true that the numbers show how the prefecture has worked to promote the implementation of these standards. For example, Kanaga prefecture, it’s the largest company, largest prefecture. This prefecture will start to implement system mitigating of regulation of - for those company having being certified to ISO 14001. Finally, in 1993 Japanese government enacted basic environmental law in order to solve the global economical issue. And the basic environmental plan was published at

the same time and is based on this law. The plan recommend the implementation of the environmental management system to company in order to deal with as effective to deal with environmental issue. And the government, Japanese government now considering the possibility of provide subsidies for small and medium enterprise in order to help them deal with initial cost for introducing and implementing environmental management system. And, some local government implemented system of mitigating regulation for such size companies. And three - three local government were obtain ISO 14001 certification within this fiscal year. And, we have a major social issue. The first is bitter experience that arousal from industrial pollution in the 1960s. The government - at that time the government made efforts to stop this pollution by enacting very strict law. And then next, the second is to oil shortage that local Japanese economy in 1973, 1979. The Government, the price of petroleum product skyrocket and after that Japan changed herself to energy efficient and a conserving society and south Japanese people have become very sensitive to pollution and energy saving. Thank you very much, and if you have a question, please let me, ask me after another presentation. Thank you very much.

DR: Sorry I failed to mentioned earlier if you look inside the brown manila envelopes there are copies of all the speeches for the speakers today.

Our Next speaker will be Mr. Masahiko Ichikawa. Mr. Masahiko Ichikawa is the Deputy Senior Director of the ISO Assessment Center, and Japan Quality Assurance Organization. Mr. Masahiko Ichikawa received his graduate degree from Tokyo University in 1966 enjoying Sumitomo Chemical Company that same year. Currently, Mr. Ichikawa is a member of the Environmental Auditing Sub-Committee and expert committee member of EMS, Japanese Industrial Standard Drafting. Mr. Ichikawa.

MI: Thank you very much for a kind introduction. Before starting my presentation I thank you very much for inviting me this seminar in Atlanta, Georgia. I was so impressed because so many people have present this seminar so early sessions, even before breakfast. My knowledge about Atlanta is limited, but I can lay several point, such as The Modern Business and Technical Center of USA and city of Gone with the Window, the last Olympic game, and Coca-Cola city, etc. By chance the Winter Olympic games is now held in Nagano, Japan and you can see on TV. I'd like to hear your impression of Japan shown on TV along with Olympic games. Yesterday, I had a chance a hear quite a bit about Georgia Tech and I was impressed by the fact that Georgia Tech is operating so efficient practical system. I'd ask to use the same system in Japan too, and I want to know its management system directed by Professor Clifton, Clifton and Profes-

sor McIntyre. Today, I'd like to present about ISO 14000 trend standard and certification in Japan, or more frankly, how to get the ISO 14000 certification, what I am always saying to Japanese enterprises. I do not say special or extraordinary, but very usual and ordinary things. I hope these points are useful to you and are useful to mutual understanding between USA and Japan concerning ISO 14001 and Environmental Management. Before going to ISO 14000, I'd like to introduce ....briefly. Japan culture.... to you. Say what is JQA? What JQA is doing. JQA is originally founded in 1957, and as a export promotion law, to test and inspect sporting goods to foreign countries, especially to USA. At that time Japanese industries were developing, recovering from World War II. Later, JQA expanded its work several times to other fields, testing, inspecting, and measurements. Our organization's name at that time was JMI, Japan Machine and Metro Inspection Association. Recently, JQA have gotten into environmental management, solar energy R&D and finally into ISO 9000, and ISO 14001 assessment. JQA has issued over 2,000 ISO 9000 certificates which are about 40% of total certifications in Japan, thus they are the leading certification body in Japan. We are also issuing the certificate of ISO 14001 in many fields. In 1993, our organization was re-organized as JQA, Japan Quality Assurance Organization. Responding to recently international demand to offer quality assurance in the three areas. These are categorized as quality assurance of ISO Standards, Assurance of Production and Safety Service, and the second, Quality Assurance of Components and Performance. The third area is Quality Assurance in new field - Environmental Assessment and R&D of solar energy. JQA have global network throughout the world, USA, Canada, and Europe, Oceana and Asia. In USA we have very close relation with U.L. Back to 14000, first I'd like to discuss about why environmental management is necessary now. Why environmental management is necessary? The reason and all the answer differs depending on situation, type, size, and so forth of the organization. The answer has to be given by the organization itself which seeks certification. I am always stressing this point. If you don't have definite career aim or objectives or a policy, you cannot continue improvement, which means you cannot keep or maintain certification. Obtaining a certificate is a starting point, not a final goal. It is only a commitment to start environmental improvement. The organization has to find a benefit or a profit or you cannot continue. Here I am going to present very general idea from which I hope and I believe you can find out your own solution. First, world tide to global environmental protection. Protecting global environment. We have to say, the earth our only plant where we can live. This is a common concept of the world that is, 1992 Geo Summit. Second, I'm saying in Japan, that may be - so it is also applicable to USA. Trend in Japan ..... environmental protection and globalization. This trend maybe the

same or different in USA. If deregulation proceeds without control, what can consumers and citizens believe or rely on. Those regulation have been protecting them and from the other side, how can industry get trust and reliance of people. Compliance to .... has been a kind of ticket, permission or a license. Think over, take actions and advertise from industry side. Deep environmental assurance to the public. The third party assessment may be useful to this purpose. For the benefit of enterprises. I'm always saying many and much benefit can be found everywhere. If you watch activities with environmental eyes, first .... and ..... anytime and in future. That is risk avoidance. If I say in separate manner, we can have good and sound sleep at night, even if you are plant manager or a safety manager. Next, cost reduction. Cost reduction is linked to environmental protection. For example, energy saving, ... action, ... , deduction of outgoing. That increases the yield and by which you can increase sales with a little cost. As a matter of fact, this is direct increase of the net profit. Business chance, if you have solved your problems on the cost of environmental management you can sell the technology, because others may be still in need of the technology. Increasing management efficiency. ISO 9000 increased the management efficiency or production functions, but not supporting functions. ISO 14001 increasing management efficiency, especially in supporting functions like UTT, waste treatment, pollution control, packaging and transportation, thus completing total or overall management. Good system can offer reliance, easiness, and get trust of people while that system increases anxiety, uneasiness, and even the tension of people. You can easily think of example, especially from the case of accidents. Long time variation of carbon dioxide and temperature. I had mentioned that first about global environment. We are tempted to think that it's not our problem, but problem to far down generations, to grandchildren or grand-grandchildren, but as was discussed in global climate change congress in Kyoto last December, it is our present problem. You can see on the right variation of carbon dioxide and the temperature for these 160,000 years. How do you think these weather has been obtained on the South Pole and Antarctic continent? There is big glacier or thick ice which has not come from sea water, that it, it is accumulation of falling snow, for the past long period. In this glacier or ice, AR or all time is locked in because, ice came from snow. There less ..... exploring party dug out the ice from 1,600 meter depths and French team analyzed it. At the same time temperature was analyzed. You can see very good coloration between carbon dioxide concentration and temperature. If it is high, temperature is high, carbon dioxide is high. If temperature is low carbon dioxide is low. Actually if the temperature is high this is Ice Age. In addition, you can see carbon dioxide in 1919, 353. This is actually PPM, which is increasing one PPM per year. When I was a

high school boy science teacher taught us that carbon dioxide concentration was 0.03%, that is 300 PPM. In addition to nitrogen 78% and oxygen 21% in the air. Can you say now, carbon dioxide is 0.03. No 0.04. Our common sense, our common knowledge has changed even within our short life. We have know very hot summer and abnormal weather in other seasons too. Global warming and global environment have to be our present concern.

In Europe many country co-exist in the limited area and complicated form with very high cooperation. This situation causes special and specific problem like pollution over international labor, like the line and like the .... and C area. And all across border flow of polluted air from west side, and from south side, and from north side and waste material transportation. There are many beautiful lakes in northern countries. Once these lakes were acidified but the causes were not found at first. Later, it was found the acid material, SOX NOX, have been grown from this site, from UK by westerly, west wing. By the way, the same thing is now happening in Japan. Lakes in Japan are now being acidified, and snowfall in winter is on the acid side, and mountain tree - I'm not saying all but some of the trees are dying. And the cause is the same. The westerly bring acid from where, west side from developing countries.

The EMS which organization established and maintained are not the same. They are naturally different, depending along types and size of organization, diverse geographical and social conditions, even on company ... In the course of discussion at ISO TC207SC1, the biggest point of issue was whether this standard should be on system side or on performance side. As the result the emphasis has been placed on system, but what is system? Professor Edward Demming of USA is very famous in the field of quality management pointed out the importance of system in his last book, "The New Economies" for industry, government, education. That is issued by MIT Center for Advanced Engineering Study, November 1994. Frankly, I was surprised and pleased to find basic concept of management system and ISO 140001 is written in this book. Professor Demming defined the system as a network interdependent components that work together to try to accomplish the aim of the system, the aim of the system. The most important thing is aim. A system must have aim. Next the system must be clear to everyone. At least to those who uses the system. If their understanding of the system is not sufficient, they will be confused and courting trouble. In 14 countries, I often have difficulties to have meals, because I do not know - I do not always know the system to have a meal in the 14 countries. To have meal in hotel is the easiest. That, you know, it is usually expensive and not interesting. And also I have difficulties to find appropriate transportation. In addition, Professor Demming say, "The system must include plans for future and is a value judgment." Enterprises

or companies operated with system. Its aim is to gain interests and also to contribute to society. The component, employee, department or divisions. Enterprises has policies. If you think of your enterprise policies that's the president or CEO, the creator, you will find these elements.

Another point of interest, system must be managed. In other words, system cannot be managed by itself. We need someone who works the system from remote independent place, from different standpoint. Environmental Management System (EMS) this said "The aim is realizing environmental policy or the organization, policy of organization in addition to continual improvement of environment, and components are requirements of ISO 14000, the system become environmental system, EMS." You can use these standards as checklist of EMS. I do not go far into the detail of ISO 9001 today, but merely existence with these components was not enough. The components have to be - have to cooperate and to help each other. They have to be linked and geared together to drive big and dynamic Demming plan-do-check-action cycle. System can be found everywhere, in production, service, team games, chess or card play, etc. Management system of ISO 14001 can be a pride to various field. Regionous management, whole management, and team management. Management system, Dr. Cashew, US delegate to ISO TC2077, when I had a chance to join - chance of joint seminar with him in Japan, he likes to apply to ISO 14000 to whole management. Professional baseball team, or if you like other ball play, football, okay, basketball, these games have to win, every season if possible. To be a constant winner, the team should have good management. A team with many star players does not win, always does not always win. Let think of constant or consistent winner. It has every element of ISO 14001. First, ... of cooperation outside and inside of the team. That actually is impact and out space. Polishing, determination and resource provisions, target and program, structure and responsibility, procedures for various situations. I don't know whether you procedures are documented or not but they are real procedures for various situations, and they have been practiced beforehand. Implementation and operation, that's season game. Emergency preparedness and response. There are procedures preferred for errors and they are also practiced beforehand. They do not say, our team never makes error. They always think of possibility of errors. Monitoring, measurements, recalled, corrective reactions for procedures and for players. Everyone can see, public available debut as necessary or after season. ISO 14001 is very practical standard, not a bunch of idealism. It requires and oxalate balance and integration of economy and environment. On the very beginning in its introduction, third paragraph it says, internal standards are supposed to include ISO 14001, a fifth organization to achieve environmental and economic goals. It can be used as

a tool to support yearly accreditation of sustainable development. In the paragraph 4.1, again very beginning, commitment and policy of ISO 14004, supporting and guiding standard. You can find the rest. The organization should begin where there is obvious benefit. Also showing example like regulatory compliance, liability prevention and effective use of materials. Again, in the introduction of ISO 14004 you can find words. You should identify economic benefit and demonstrate it to interested parties. You can link environmental objectives and target with specific financial outcomes. You should provide resources to gain the most benefit and in both financial and environmental terms.

Next slide shows the concept called Environmental Management's System. Everyone who may be on the top or shop floor has to participate and also to have various responsibility. EMS works with combination of both way, top down-western concept, bottom up-eastern concept. Top management provide policy and resources. Shop floor provide information and improvement, thus internalizing environmental cost with good cooperation. Only enterprises that can internalize environmental cost can survive.

Next slide shows interested parties. You have to consider and to communicate with these people and hopefully such .... all of these people. I can show you one example from European companies, Ricoh UK. This company is Japanese oriented and has a production site in UK. Ricoh company manufactures copy machine. In 1993 this company has got UK Queen's Owl for technology, especially contribution to environment, 1994 EU Industrial Environmental Awards, Waste Treatment. The reason for both awards was improvement of environment along with improvement of ..... activities. Our management, what actually have been done was recycle, or copy machine drum. They have developed the technology to finely polish Armenian drum, 0.7 to 1 micrometer at one time. At this copy drum can be used or be used within +/- 10 micrometer tolerance in diameter, ten times recycle has been - has become possible. At the same time, prated selenium fume was recovered and reused. Water - pure water is used instead of CSC for clean. Recycled paper, paper board have been used for packaging. As a result cost of the drum has been reduced to half. Queen of UK or better to say UK governments intent to bring up or foster this kind of enterprises as a part of economic policy, that contribute to environment and also developing sustainably. This company can now us Royal Crown Mark on its letterhead, fax and packaging. Employees inspired in love and are very, very proud of their company now. Criteria for the assessment as a requirement of ISO 14000, especially in the specification part. ISO 14001 allows various type of EMS, new special system is not necessary. The questions our assistants asked was whether or not the system con-

forms to ISO 14001 requirement, and the system - must be established and maintained, implemented and effective. This aspect will be verified by interview or referring to evidence like records, documents or practices. Both positive conformity and negative non-conformity features are picked up as findings and are reported to clients. Negative features are classified in three categories: observation, minor non-conformity and third us major non-conformity. I like to compare this assessment with car inspection. I don't know whether or not this system is enforced in this country, but we can compare this to car inspections system. You can understand if I say, a car is a kind of system. Its aim is to arrive at destination safely and rapidly. If we can correct and connect the best car parts in the world, we cannot make up the best or a good car. It may be possible that it even does not run. In this car inspection, major non-conformity corresponds to the situation where car does not run, or where there is a serious problem. The cause may be missing our badges or spirits of improvements to environment - if I say environment. Missing of a system or parts, manufacturing of parts or systems, missing of links and the connections. It often happens. Non-compliance to regulations, many small defects all over with a car. Minor non-conformity may correspond to the situation where the car can be driven somehow, but caution should be taken and early repairing is required. Observation may correspond to situations where there are possible risks for driving, although, there is no clear defects or evidence. Anyhow, after repairing, you can enjoy comfortable and safety driving. Pointing out problems is a law or/and responsibility of us - certification body as a service industry or service functions.

Finally, I'd like to mention a little bit about combined audit. Combined audit of ISO 14001 and ISO 9001, or 9002. At present ISO 14001 and ISO 9001 are not integrated. ISO TC207 and 176 has begun their work to make both standards compatible. However, ISO 14001 and ISO 9001 have already many common requirements like structures and the responsibility, training awareness, competence, documentation, operations and monitoring, and measurements, non-conformity and corrective actions, preventive actions, recalls, EMS, audit, and management issues. Of course, each standard has a specific elements. ISO 14001 has very important environmental aspects ... and other requirements. Communication, emergency preparedness and response. ISO 9000 inspection and test status, product identification and traceability. Third statistical technique. We have already conducted combined audit. Simultaneous audit for common elements and separate audit for different audits. We have various combination of ISO 14001 and ISO 9000. The most frequent combination at present is surveillance audit of ISO 9000, and the installation audit ISO 14001. And, third comes a surveillance plus surveillance audit to

both. The common parts of both standards assessed by one auditor, with both qualification. As a result audit duration mandate and audit fee deduced. Example of combined audit mandate is shown on this slide. 14001 registration, nine mandates and ISO 9001 surveillance audit, two mandates should be .... three mandate. I'm sorry. Three mandate for 9001 audit. If we call - carry out these audit independently, we need 10 mandates, but for the combined audit, this mandate have deduced to 8 mandates by two mandates for the common elements. The benefit you can gain with this combined audit is not limited to time and costs of audit. Even bigger benefit you can obtain is you can see by yourself the difference of both system in your company. As a matter of fact, it often happens that both system are different and at that location, you can take a better one and second you can coordinate to make the both systems better even if you operate them separately. And finally, you can establish integrated or compatible system and service system of overall corporate management system. I'm sure you have already a management system in your organization, and many sub-management system, like personal management, financial management, service management, production management, R&D management, not limited quality or environmental management. All these management can be coordinated using ISO 14001 if you try. ISO is now considering many management systems. Frankly, we don't like so many independent management system or management system standards. We want coordinated standard for our better efficiency. We hope ISO will be heading to this direction. As my closing remarks, I thank you very much for listening to my presentation, and again I'd like to thank you very much for giving me a good chance to visit great country of standardization, thank you.

Thanks very much Mr. Ichikawa. Alright. Our speaker will be Mr. Koichi Sohara Mr. Koichi Sohara is a graduate of Shebaura Institute of Technology with a degree in Mechanical Engineering. In 1970, he joined the NEC Corporation, where he is currently the Senior Manager of the Overseas Support Environmental Division. In 1996, Mr. Sohara completed the Environmental Auditor Training Course which is related to ISO 14001. In addition, he is also the Senior Manager of the Huchu Plant which is ISO 14001 certified. Mr. Sohara.

KS: Thank you Mr. Richardson. Good morning ladies and gentlemen. Yesterday, we had welcome dinner party and at that time I - I'm so surprised to share about Mr. Richardson had - have - have been near the prefecture. It was located in 1800 km southern part from Tokyo. It's a local country, but it is my home country, so I realize our relationship between US and Japan growing not on the economic side, but also people relationship that will contribute our fruitful future idea. So today my presentation is, first I'd like to introduce NEC Corporation, and second our internal activity including Japan

industries approach toward environmental preservation, and third, ISO certification through NEC. So this first introduction of NEC Corporation. I'm sorry to say the screen cannot be seen clearly, but you may have - have a copy. So NEC Corporation was founded 1899, and since approximately 40 billion US dollars as for the fiscal year in March 31, 1997. And our are many products, data switching systems, PBX, satellite communication systems, and computers, super computer, mainframe computer, personal computer, and its peripherals, monitors, printers, memory micro-computers and electronic devices, CDs and we are also making some color TVs and HDTVs. And total number employees 150,000, and we have many manufacturing companies. NEC business have expanded over the past 99 years, beginning in 1899, who is one parent in Tokyo, but today NEC group has approximately 200 companies. More than 100 manufacture and distribute are located overseas. NEC corporate, NEC operates primarily in single segment that we call CNC which originally meant the integration of computers and communications with devices. In that concept electronic devices are integral part of CNC and act as a driving force in computer network. These explosive advance of the multimedia age, CNC technology is essential to its ongoing development in a wide range of area within society. NEC will contribute primary role in a vast growth of field. This is our corporate philosophy. We are manufacturing and selling CNC product. This is our corporate philosophy. You know .... it is indispensable that we must ....in a rich and clean environment in which nature and living things are well respected. And believe that CNC technology can provide effective solutions to preserve nature as an invaluable asset in our world. So next I want to introduce our environmental activity. First, I just touch Japan and NEC environmental history, so after high Japanese economic growth in 1960s, Japan had faced serious regional provisions caused by rapid industrialization with less environmental conscious and lack of technical environmental knowledge, and inferenced some people's health condition. So, Japan regret deeply and has taken many counter measures to overcome the situation. Japan have a established basic anti-pollution roles. In 1967, it has .... with air pollution, water discharge, soil, noise, and vibration, and various .... disposal standards and maintain systems and educated capable personnel to work to prevent pollution and facilitated developmental and personal technologies and promote introduction of anti-pollution devices. NEC has recognized the importance of environmental issues and structured pollutant prevention issues in 1969, and started first meeting of Central Environmental Committee discuss about environmental issue,... corporate operation and first president was Vice President and start environmental audit for domestic manufacturing site in '93. So in the 18 - 1980s, damage of environment began to be perceived as a global problem, which have different futures for the pollution seen in the

past. In ’89 - ’87, sorry, sustainable development was defined in ... report as meeting - meeting the needs of the present who was not comprising the ability of future generations to meet their own needs. So in this context the preservation of world ecological systems were recognized as a common human issue, regardless of geographical areas, national borders and generations, and in ’92 first standard was established in British as BS7750, and ISO technical committee 207 for the standardization of environmental issues had first preliminary meeting. And then ’95 EMS started in Europe region and last year we had a conference meeting in Kyoto. So in - at Japan, came down then Japanese federation of economic organizations created - came down global environmental charter in ’91. And lots of Japanese industries responded and create their environmental charters and voluntary action plans in order to strengthen their environmental activities. So, ... committed preventive and voluntary for promoting environmental preservation in its global environmental charter. And, it has been updated. I’m giving a sharping to ...environment with C3 key concepts, which are enhancement of environmental ethics and improved efficiency and for voluntary effort to the environment. Enforcement to voluntary effort to the environment. And with four urgent issues is coping with global warming and structuring recycle best for safety, and create the better environmental management system, and environmental audit system by applying ISO 14003, and pay more attention to overseas project. NEC we created - we created NEC environmental charter in ’91, and enhance eco-management committee by extending in its environmental conscience from manufacturing site to old product lifecycle stages, and in ’93 we organized ISO project to introduce ISO certification to our company, and in ’94 we started published year based NEC eco-action plan. It’s a ... plan - respond to the .... and in ’97 we published environmental annual report. So, this slide show organization structure, NEC environmental management. So, NEC has eco-management committee, whose representative is executive vice president and consist of general managers of each business group. The committee has a top judicial making function and a consultation in which the major environmental issues that may affect our present our future business operations are discussed and we have ...programs, and the proceeds is communicator to all NEC Groups, including NEC sales. NEC has nine ... facilities, nine plants in India .... and we have domestic subsidiaries and overseas subsidiaries, direction policy are communicated with these conferences and in that company we have a co-management committee and such a direction spared to all employees. So I explained NEC’s environmental structure with this picture. First, the policy and economic plan are given to all NEC facilities and subsidiaries and these are published also and in these companies they make their own proceed, and make the action plan, and implement with PDC recycle. And, that activity checked by

Internal Audit as himself, and all such activities are audited by NEC comprehensive audit by head office and ISO audit by registration body. And that result are reported to top management through the Eco-Management Committee. So, next I'll show you the Environmental policy and economic plan and audit structure and environmental report.

So this is NEC's environmental charter to clarify the direction of our environmental activities. Right side shows principles and— left side, left side shows principles and right side shows action described in seven items. All NEC employees are demanded to ... in their daily work and we have card printed in this matter and given— such a card is given to all employees. This shows you some keywords of action plan. So first, we described about environmental conscious product. We are a manufacturing company and produce product to the society, so we have to consider the - how to say' - the going product. What we call going product - which consider about less environmental burden through the product life, so we a— developing the product assessment to productive assessment system, to producing ECP, eco conscious product. Second, is immunization of environmental burden, and no product life cycle stage. For instance we are doing a group purchasing, introducing a co-factory philosophy and ecologics and resource recycling and used product recycling. And also, we have very much conscious about our legal compliance and we set our NEC standards which are much severe, 10 times or more severe legal standards to ensure the legal compliance, and to encourage the environmental activities, the implement to all .... to all employees are very, very important we think, so we are giving to all employee education program and forum and campaign and seminar through the year. And, establishing environmental management system structure, and enforce audit by Environmental audit, Comprehensive audit and ISO audit also. And lastly, ... are also very important we believe that we are issuing annual report and we have Internet home page for environmental matter. This shows eco action plan to 20, 21 for fiscal year 1997, sorry this misprint. So we have seven items, and I show you one example for waste reduction. We started this activity since '85. Because of this activity we need participation to all employees so to get - I'm sorry, I forget word - awareness from all employees, this is a good activity for that. So, we start this activity from '85 we call Part 1, and Part 2 up to started '90, and we set target disposal volume, ... deduction 70% by 95, compare with 90. And we successfully completed and this is a Part 3 activity which target 85% deduction by a - to seldom compare with 90. So we set definite fiscal target all of these items, and issued to NEC group. So this is environmental audit structure. The structure consist of three part audit. One is internal audit which done by themselves, in legal compliance environmental performance and envi-

ronmental management system check. So, from ... body we have ISO 14000 audit, its management system audit and we have NEC Comprehensive Audit, it's - it is based on the conformation of Internet audit and ISO audit, and we applied liberal judgment. And, all domestic subsidiaries are expected to have and audit rating of 60 or greater in a full scale of 100. Lower .... taken as a auditing taken as needs some improvement. This is an environmental annual report started in '97 to disclose our environmental activities. In this report we carry the progress of NEC action plan, environmental impact data and the example of activities. And, last year we distributed more the 11,000 copies to our customers, NEZO and .... inside and outside of Japan. So I introduced ISO 14000 situation NEC, so first I show you the present situation of major economic companies in Japan. So this graph shows the status of ISO certification of domestic manufacturing sites. That number shows the total site planned ISO certification of each company. And, red color number shows ISO certified this year as of November '97, and many of them are going to accomplish the ISO certification by March '98, that is end of fiscal - Japanese fiscal year - '87 - '97. To promote ISO certification in NEC we organized first project in '93 just after the BS7750 was published. And, to build up know how of EMS Standard we selected five mother companies from distinct business field in NEC Group. The project member consists of key management of each mother companies, and a staff experienced of ISO 9000. At first, project member visit and studied one of our subsidiaries located in Iran where BS7750 had been established. As of result, one mother company got BS7750 certification in November '85. In the second project its to sharing know how among NEC group, we organized task force team to support as subsidiaries and combat ISO seminar and to implement internal ISO audit by NEC's ISO expert. Before introduced ISO certification we applied ..... beating our former EMS and ISO requirement, then we recognized that to measure gaps beating them. In Section 4.3 Environmental aspect. Also, we could identify significant environmental impact and aspects with our sense and experience. We didn't have its systematic documented procedures. Additionally, our internal audit have lack of systematic approach. We used for, we used to focus on rather than environmental problems and legal compliance. So by introducing ISO we established system audit. This shows the systematic procedure identifying significant environmental aspect. First, we clarified the interface company and surrounding environment, and second, checked the consumption of generation amount of each environmental aspect, and third evaluate environmental impact on each aspect by quantification, and fourth register significant environmental aspect with reasonable criteria, and considering with legal and hazard recurrence, NEC policy and investment on others, we set environmental objective and target. This shows the concept of identified environmental aspect. We

clarified interface by considering the amount of generations of circumstances and energy going in and out of the company as our environmental aspect. So in order to identify significant aspect we have to evaluate environmental impact in each aspect. This shows rough image of our impacts evaluation. We consider probability of occurrence and severity of impact in each normal operation case and shut down and starting up case, and emergency operation case. This slide shows all stages of product life cycle in which our major activities in each stages are selected as our major activities, so at moment on green purchasing, green purchasing is our new activity, and our ISO 14001 PDC cycle used as a driving force of these activities. This is what NEC thinks green purchasing. Green purchasing has two conditions, one is product which shall be considered less environmental burden in its life cycle. Some product, in order to prove such a level, some product has environmental level, eco level like a Energy Star or a Blue Angel and some used life cycle analysis and second, another is a company which are producing such product should have deep conscious for environmental conservation. So conformance with ISO 14000 is one evidence of that. This is NEC's ISO certification plan and present station. For the manufacturing side subsidiaries in Japan we are aiming at 100% achievement next month, so that is half a year ahead of our original schedule. And now we are aiming to get the certification for subsidiaries and overseas manufacturing site also and for overseas UK and Iran ahead of their ... And ... the manufacturer located in Australia, Argentina, China, Brazil, Philippine, Malaysia got ISO certification, and maybe sorry to say, most of US subsidiaries are studying - preparing now. This is why NEC's aggressive ISO certification, so NEC can restrict and bring force, enforce our environmental management system and performance with ISO 14001 conformity and that can improve operational reliability to management and cost saving by saving NEC or waste reduction, etc. To outside of the company, NEC made greater companies' brand emerge and improve public trust with interested party by mutual recognition of ISO certification. Then NEC are able to meet our customers' requirement of green purchasing, and those activities contribute to global environmental preservation. Finally, I'd like to touch up on our future plan. One is joint ISO audit with quality and environment. So we are considering to combine some part of quality system and environmental system. To create better total management system and implement joint audit. This is a measure of joint audit. We both have core element and satellite element. This part we can combine. And second is a integration of site ISO audit. NEC have nine ISO certifications in every brand in the NEC. However, those have similar EMS audit and environmental activities because they are NEC company, so we have plan to get ISO certification as one organization of NEC Corporation. Thank you very much for your patience.

DR: Thank you very much Mr. Sohara. From this point we will take a 20 minute break, so please enjoy yourself.

DR: Okay, next I would like to introduce Ms. Holly Graw Law. Ms. Holly Graw Law is Senior Research Associated and Manager of the Standard Information Service for Georgia Tech Center for International Standard and Quality CISQ. Prior to joining Georgia Tech in 1983 Ms. Graw Law worked for McKenzie and Company. She holds a B.S. from Northwestern University and a M.L.N. from Emory University. Ms. Law.

HL: Good morning everyone, I appreciate the opportunity to talk to you today and give you a little bit of information about the status and the activities related to ISO 14000 here in the United States. Before I begin, I must advise you that it is very difficult to obtain good and reliable information on how and where ISO 14000 is being used. There is no national clearinghouse here in the US or even internationally about ISO 14000 in the market place. So, I want you to be aware that some of the data and numbers that I'm going to present to you today are the best that I could find. They're kind of the best of the worst so to speak and I went with numbers that I could indeed verify. I would caution you not to make too many inferences or even to use this data in other ways. It really, it comes from varying sources, and although I believe most of what I'm presenting is reliable, I wouldn't swear to that a 100%. I'd hate to trip in front of all of you, okay. At the present time I was able to confirm that there are at least 87 US sites that are registered to ISO 14001. The reality is that there's probably somewhere between 90 and 110. In the 87, of course these are sites that I'm reporting to you. If you looked at the number of companies which have gone with registration that number, of course, would be much lower. For example, this 87 number includes five sites of Lucent Technologies which recently was awarded a corporate wide registration certificate, so they got one registration for five sites. This 87 also includes multiple sites of companies like Rockwell as well as Lockheed Martin. Multiple sites of those companies have been registered, although in that case each site has gone for its own registration certificate. So, I just wanted to provide you with that detail about the 87. Of course, if we had any way of collecting data or reliable information on the number of sites that are working towards or have implemented ISO 14001, I think the number would be much larger. I know from my participation and attendance at different conferences and meetings that there is a significant amount of implementation activity related to 14001 where the companies have absolutely no intention of registering - of doing any type of third party registration. Companies like John Deere are an example, they of course

have an incredible market presence and I think that many firms that are large multi-nationals might go this direction. They may be unwilling to incur the cost associated with registration and there's really no drivers right now for them to pursue actual registration. They have the market visibility already so there's really no gain for them there. There are 31 states that have registered sites at this point. I though I would share with you just so that you've seen it where some of the concentration of the registration is. About 63% of the site registrations are in 8 states. I'm not sure what conclusions we can draw from this, you can certainly look at the industries in these states and recognize that that's probably a factor. California and Texas, of course, are what the Nesbit Group calls bell weather states and which typically lead in business and social and political change. So, we do have a high concentration in a small number of states at this particular point and time. In Georgia, we're proud to tell you that there are currently three registered sites. There will be four soon. Intercolor in Duluth has been recommended for registration after passing their registration audit recently. I would point out to you that both Allen Bradley and Intercolor are divisions or units of Rockwell. Allen Bradley was the first to achieve registration in Georgia, although I think it was the last to be reported in the media. With regard to what industries is in the US are going toward registration, there's incredibly limited data. The best that you can say based on very limited information is that electronics and chemical companies are really leading the way. This kind of makes since. You know, these industries face a lot of environmental regulation, they're highly competitive industries, they operate in global markets. I think it's interesting that SICA 87 that with regard to engineering firms, management firms, consultants are also moving towards registration, and actually at this point are the third largest industry segment according to the limited data to pursue registration to 14001. I don't think any overview of 14000 in the United States would be complete without taking a look at what's happening at the government level. So I chose a few examples here of what's going on on the government front here in the U.S. Most of you are probably aware, if you follow developments here in the United States that the Environmental Protection Agency has been very, very active in 14000 to the extent that they have participated all the way though the development process on TC207 and through the U.S. tag. Actually, an EPA administrator is head of the U.S. tag right now. EPA has also even before the standards were published has been funding many different types of pilot projects. I couldn't even begin to list them all to you. These projects have ranged from projects which developed an implementation guide for small and medium enterprises, to actual pilot programs that have lasted several years which have looked at implementing EMSs in companies and the benefits that accrue and the

difficulties associated with that. There's also a program the EPA has funded where 10 different states are participating in a pilot program with regard to 14001. So, EPA has been very, very active on this front. DOD basically, DOD units are pursuing conformance but not registration. The primary factor for that decision has to do with cost, whether the cost of third party registration is really justified with taxpayer dollars. At this point though, there are some DOD installations that have implemented fully ISO 14001, several Army depots among them. NASA recently awarded a contract to a Virginia firm which is going to work on developing what they call a business case for 14000. Really an examination of the potential costs and benefits of 14000. That particular contract, the contractor is going to be conducting gap analyses at 14 different NASA centers and installations. They will also be doing some benchmarking of already registered firms to gather further information and data on the potential cost and benefits that could be realized by NASA with 14001. DOE is actually - I have here looking at - actually they're already moving forward (DOE is the Department of Energy) moving forward with integrating environmental safety and health programs with ISO 14001. For this particular integration the Hanford, infamous Hanford nuclear site out in Washington is a pilot for integrating all of the management systems of 14000 out there. And there actually are a number of government owned contractor operator commonly called GOCO sites that have implemented and been registered. These include for example, Allied Signal in Kansas City, Westinghouse Electric at a waste isolation plant in New Mexico, and I believe the Savannah River site in South Carolina. So, in terms of actual implementation and some registration activity, I think DOE related facilities are kind of leading the pack, so to speak. In terms of the infrastructure for 14000 here in the United States at this particular point in time, there are nine different accredited EMS register - registrars. They've been accredited by the National Accreditation Program ran by ANSI and RAB. All of these, of course, are U.S. offices. One of the difficulties talking about infrastructure for 14000 in the United States that exist today is the difficulty that auditors are having - getting audits to meet the certification requirements to become certified auditors for 14000. This is a partial consequence of the fact that we don't have a mad stampede by U.S. industry towards 14000. Actually there's been a organization, kind of a clearinghouse formed where auditors for a flat $400 fee will come out and do 14000 audits at no cost, simply because they're working - they need the hours to get their certification as lead auditors. So that is a significant issue I think for the infrastructure here in the United States. The NAP has accredited nine organizations - training organizations that provide EMS auditing courses for 14001. You'll notice that two of the nine are Canadian organizations that have been accredited at this point.

These are organizations that offer accredited ISO 14001 lead auditor courses here in the United States. I think that it would be useful as part of providing an overview to talk about the fact that U.S. industry has not, we have not seen the activity here in the United States that there exists currently in Japan and in Europe and talk a little bit or discuss a little bit about why that might be. The fact of the matter is that there's very little information, hard-core reliable information on why or why not companies are choosing or not choosing to go with 14001. The best that you can do is talk to people who are in this particular area, read the literature and see what they have to say and kind of come up with some conclusions on your own. What I've done here is put some these together. I am not going to really discuss the validity or non-validity of these industry concerns. There are probably people in this room who can argue the pro and con of each of these points. You do run across these consistently in the literature though, so I do think that these are concerns or problems, however you want to phrase that and they do warrant some attention. The first concerns potential exposure to increase discovery of environmental non-compliances, regulatory non-compliances. And, this seems to really be a reflection of not only the perception but the actual experience of some U.S. companies in conformance auditing, management system auditing versus environmental compliance auditing. I think a lot of the concern the industry has about this is based on the distinction or lack of distinction in some cases between this, and real world experience. I mean we've received reports at CISQ that there are U.S. 14001 registrars and auditors who come in and do very compliance oriented audits of 14001 systems. That of course, you know, is controversial. It's certainly an issue in the auditing community for 14001. The other, another one of course is the potential for increased liability exposure and I'm assuming that Jim Coca is going to enlighten us on that a little further in his presentation. The idea here is basically the old cliché about 9000, the good news is you have a paper trail; the bad news is you have a paper trail. I think that the - well I'll let Jim discuss it. Certainly the full and effective implementation of a 14000 system may actually reduce your liability but there are a lot of other legal considerations and the lawyers in many companies are actually making the decisions on whether or not a company is going to go for registration. Public perceptions, there does appear to be some problem or concern about public perception that an ISO 14001 registered firm was some how non-compliant before they attained registration. Either non-compliant with their own existing EMS or non-compliant with regulations...limited public understanding of ISO 14000 that the distinction between or knowledge of what an EMS is compared to what and how that relates to environmental regulations, there's really a gap there and I think it's fair to say that the public doesn't have a good understanding of how an

environmental management systems relates to or is different from or can be distinguished from environmental regulations. So some companies do have concerns. In the literature there was recently a lengthy article about the fact that a U.S. pharmaceutical company implemented 14000 and went through a third party registration audit passed, but then decided not to actually get the registration. They prohibited the registrar from issuing the certificate and they simply self-declared. There's a great deal of speculation that the public perception had a great deal to do with their decision in this regard. In addition to the difficulties perhaps of opening themselves up for liability issues related to audit reports. The command and control mentality appears to be a hindrance or an issue. This is not only the command and control mentality of regulatory agencies here in the U.S., but also the same mentality on the part of environmental engineers and environmental managers, and their executive management in industry. You know, some industries which have been subject to regulation from EPA since the early 70s having ingrained in them a mentality related to their environmental management and their environmental engineering, which is very regulation and command and control oriented. I think we've seen - we've seen a lot of movement between some of the regulatory agencies, particularly EPA trying to move into partnerships with industry, to try some new things, and you know for the small firm regulation drives their environmental activities. You know if you're a small company with limited resources it's probably everything you can do just to stay up with the regulations, so you may be thinking well, why should I bother with anything else. I could hardly keep up with that. And then, for larger companies they may still be thinking command and control, and have their - have actual stake holders among their employees who are invested in command and control based systems inside the companies. So, and then finally, there certainly appears to be a lack of market drivers for 14001 registration here in the United States. You know, customer requirements with regard to like 9000 are, you know, it took it a long time but that drives 9000 registration here in the U.S. That just simply is not here yet with 14000. Most companies are not encountering customer requirements. There's certainly no regulatory requirements for 14001 and lot of companies say well, my customers aren't requiring it, the regulatory agencies don't require it and they're not giving my any benefits if I do do it. So, you know, until some of these drivers or incentives emerge in the market place, I don't think that we're gonna see any type of mad rush. I think that the trends that we do see where you've got larger multinational companies in big industries like electronics, chemicals, maybe paper will probably continue. I know that Japanese owned firms here in the U.S., you know, are moving toward and would be doing 14000, but I don't that we're gonna see any big leaps in activity in that area, okay. Finally, as an aside and

just changing subjects for a moment, I tried to find information on common non-conformities in 14000 systems to give you some idea of what companies are encountering in terms of difficulties in implementing 14000 here in the U.S. Unfortunately, there was no data out there that I could locate, and I tend to think of myself of being pretty good at locating that stuff because I've spent 15 years at it. I did however come up - there is some data out there, again this is based on a very small number of companies, of firms that have actually been registered to 14001 and have actually gone through surveillance audit cycles and I don't think that we're seeing any surprises here. Those of you who are familiar with 9000 know that document control, process control, you know, those are always a problem. There's always non-conformities and what we see are really similar I think - trends emerging, at least from this limited data in 14000 where some of the difficulty or problem areas are operational control and document control. Also in 9000 you know you'll see large non-conformities in the PDA - PDCA cycle which means problems of management review and problems with internal auditing systems. So, this slide is really just meant to highlight were is there is data - some of the areas in which companies struggle with 14000 here in the United States.

Before I close today, I'd just like to mention to you again that Georgia Tech offers a 14000 discussion group. I coordinate and facilitate that group we have quarterly meetings. If you sign up on the sheet we will be happy to have you attend those meetings. In addition, between now and June '98 - the end of June, Georgia Tech does offer one day no cost 14001 gap analyses to any companies which have facilities located here within the state. If any of you are interested in availing yourself of this one day no cost gap, please feel free to give me your business card and we'll be back in touch with you. Thank you very much.

DR: Thank you Ms. Law. Our next speaker will be Mr. John Gray. Mr. John Gray is Director of Environmental Services for Blue Circle Aggregates of Atlanta, Georgia. He has overall environmental responsibility for 19 plant sites located in Georgia, Alabama and New Jersey. Blue Circle's revised environmental policy requires the development of an integrated environmental strategy. This includes implementing environmental management system at all sites compatible with ISO 14001 by the year 2000. Mr. Gray has a B.S. degree in Chemical Engineering from Tri-State University and is a registered professional engineer in the state of Florida. Mr. Gray.

JG: Okay, well this is not Japanese but it's an acronym of my speech today, "How to Implement in Environmental Management System at a aggregate company in Georgia." And when you're thinking about it

from an environmental management system it kind of reminds me of that little cartoon that some of us may have seen on a McDonald's box a few years ago - How do you eat an elephant? One bite at a time. The environmental management system and ISO 14000 is certainly enormous, and I think I share with concerns of other business people in Georgia and the United States in why would you do it, and I'll explain why Blue Circle is doing it and it may help you on making your own decision. But, today I want to talk about Blue Circle's Industries Environmental Policy its our parent company in U.K., a chronology of events with us here in the United States. The formation of environmental team, which I think is a very important part in rural - in our company's system that we're putting together today. You know, how we did environmental aspects, and then a summary at the end of today's presentation.

A little bit about Blue Circle. We're wholly owned by Blue Circle Industries in the U.K. Blue Circle North America operates several business units here in the United States: Blue Circle Cements seven plants in North America, Blue Circle materials with 100 ready-mix operations in North America. You may be familiar with Blue Circle Williams Company, the yellow concrete mix trucks that operate here in metro Atlanta. And then Blue Circle Aggregates that I'm part of with 19 aggregate plants in Georgia, Alabama, and with operations in Canada. I think this answers why we're doing it as a company. The environmental policy was put together—Blue Circle Industries in 1996 to develop an updated and dynamic environmental policy. Blue Circle Industries recognized some the needs that were addressed in some of the earlier presenters today, by identifying if you're gonna be a world class operator you need to really have a license to operate in the world, and how do you do that? You develop a system patterned after ISO 14000 that says, yeah this is what we're doing and you can present it to your neighbors, your friends, you stakeholders, your investors. So its very, very important I think as we go forward to think about that, you know how we're perceived by other people in the world. The environmental management system puts together a list of key performance indicators which I'll talk about later. It has put together a format for different companies in the world wide organization develops best practices on environmental systems and this is spilling over into safety as well as other best manufacturing procedures in the different plants. I think it puts together a format to develop procedures and to develop high standards in environmental performance throughout the group. And lastly, I think with environmental communications, communicating effectively to all levels within the organization from the guy that operates a shovel in our tunnels all way up to the president of the company, where they now have a common ground on what they want to speak to. You know, we - we have a program where all plants world wide will have a system in conform-

ance with ISO 14000 by the year 2000. And why I say that in conformance, we're going through the problems, that I think Dr. Coca will talk about as Holly did, you know how far do we want to go with our ISO program. We do know that all major plants in Blue Circle Industries operates and this are primarily the cement plants around the world, will have full blown system compatible with ISO 14000. I think this is the heart of what, what any company puts together as a way to put together to track continuous improvement in environmental performance. Number 1, have a policy statement that is understandable and readable by all the employees so they can buy into it, so they have ownership in it. To develop a system that we heard about today, an environmental management system, so that it's structure and it's organized. When we first met with our different employees at the different plant sites that they looked at the enormity of the system and they said geez, this is kind of burdensome, but as they found out more about it, particularly here in the United States with all the regulatory compliance issues we have to deal with, we are already dealing with many of the things that you have to do to meet the ISO standard requirements. And then lastly, environmental communications, and when you think of communications you think about internal communications. But what we're finding out with at least in the business that I worked with, the aggregate business we have many perceptions with our neighbors around our different quarries that we have. So, by developing communications and setting up core advisory council were we're listening to our neighbors on what their concerns are, you know, while we, we knew many of them we can know address all of them in one manner or other.

Blue Circle Industries on a world wide basis has determined key environmental indicators that they want to report and this would be included in our 1997 environmental statement that will be published later in 1998. By tracking total energy, this is all petroleum, electrical and all the energy used in the plants. Water usage. While water usage may not be a primary concern here in the United States well least here in the Georgia, and Savannah is certainly is worried about salt water intrusion there. You know what we see with our MPDS discharge permits is a concern about water discharge, and so we're, we're having a better understanding overall water usage with that aspect. Waste including packing, noise and vibration with the blasting and the drilling that on in our quarries, tracking complaints, neighbor complaints, and peer, peer environmental pressure group complaints, non-permitted releases to the environment, and then the last one here which no one never really wants to talk about, giving a notice of violation where Mr. EPA or EPD, you know, here in Georgia nobody comes in and said you guys really aren't doing a very good job, and we want you to correct it. This may be kind of hard to read but it talks about the chronology of events within the

aggregate's company. It started back in 1993 where an environmental audit was done in the plant, this is a compliance audit. Here - here in Georgia, Blue Circle bought the assets of Georgia Marble back in about 1990 and the first compliance audits were done in 1993. An employee environmental policy statement was formulated in 1994. We initiated annual environmental awareness training for all employees in 1995. In 1996 with the formation of Blue Circle Industries' environmental policy we first started reporting environmental indicators, and - and we became very aggressive in informing our environmental management strategies in 1997. In what this outlines starting in February 1997, until October when we hope to conclude is about an 18 month program for us to an implement environmental management system again compatible with all the requirements ISO 14000. It started by attending some briefing seminars conducted by CISQ this is an environmental management system, having a gap audit conducted in April, so we had a better understanding about what we were deficient in, what were the shortages, what do we need to think about doing. Forming an environmental management team consisting of at least one employee from each site, and I'll talk about that team a little bit later. We met with all employees in the fourth quarter to determine aspects. In November we had training in-house where I sat with four days along .... hero over here on how do you do audit and how do you maintain document data control. And then we came up with an abbreviated environmental policy statement for our employees with our "ROCK" statement, and I'll talk about that in a minute. In December, we're going to determine through help of legal counsel on how far we want to go do we want to. Do we want to self-declare or do we just want to say we're in conformance, and lastly do we want to bring in an outside registrar to certify the plants.

Blue Circle Industries has a very complicated 500 word, 12th grade reading level of environmental policy. Our environmental team which consist of employees again at all levels, from loader operators to plant managers said that's kind of complicated. What we really want to say is that you know, rock, our company, we take big rocks to make little rocks out of them and "ROCK" stands for Reduced Pollution - "R", "O" Ongoing Improvement by Meeting Goals, "C" Comply with Regulatory Requirements and "K" Keep Our Plants Safe and Clean. You know that statement is short and sweet. This meets all the requirements of an ISO 14000 environmental policy statement. It's something that every employee in the plant can define to. And, I tell you what the - it's an easy message about the environmental compliance and ISO 14000. It's something that all employees can buy into after they get by the bigness of it and complexity of ISO 14000. Again our environmental team is at least one employee from each plant and department. When we sent the letter out I didn't know if I was going to get plant managers or secretaries or loader opera-

tors, but what we found out was that we had a nice mix that addresses the broad spectrum of the operations that we have. Interested in the environment and again we have a good cross-section of employees to work with. When you implement a system you need to determine what your aspects are so that you can determine the impacts. We looked at that in the fourth quarter. This was one of the most intensive things we did, but I think it improved the overall environmental awareness whether we did ISO 14000 or not. We held meetings in conjunction with safety training in the fourth quarter of 1997. Two hundred employees came up with a list of 1,230 items. Of course, there were some similarities between them. This was characterized by the team into 66 aspects, and the team decided to focus on four key aspects in 1998. Again, I mentioned I work for an aggregate company, we make little rocks out of big rocks, so dust is a primary concern, and we're gonna focus on that in 1998 by measuring the amount of dust we generate. Waste is an issue where we want to reduce the amount waste that's carried off to landfills here in Georgia. Water and noise were determined as a key aspect, but we have limited resources so we're only going to focus on two areas this year as we put those into the maintenance phase, and we will look at our other aspects where after this whole program is developed we will determine improvements in all 66 of the aspects. Wrapping this up so I have to time for Dr. Coca to give his - his speech here, keep it short and simple. I think we've heard that phrase before, don't overwhelm everybody, don't try to do something in 3 months that's gonna take a lot longer. Plan early, don't hurry the plan, and involve as many people as you can, not in big long eight-hour, one-day meetings, but short meetings where you're getting the message across slowly and surely. And in conclusion, the policy concentrates on organizational and management issues. It's not compliance driven. It's putting a system in place that provides a framework for effective change and in, and I know from the commitment from our parent company that is committed to delivering sustainable continuous improvement in our environmental performance. And lastly, and I think the real thing here when you think about every employee has a central role to play in this system, and that's what I'm hearing from the employees, that they're really enjoying it, they're finding out the yeah, the company is concerned, I'm concerned, and do you have a plaque where you have a sign that says, "Authorized Visitors Only", or do you have a sign up that says yeah, visitors are welcome. Come in and see what we are doing. That's what we're trying to achieve. I appreciate again the chance to present this to you, thank you.

DR: Thank you Mr. Gray. Our next speaker will be Dr. James Coca. Dr. James Coca is a Senior Consultant with Excel Partnership. He has a Ph.D. in Political Science and International Affairs from the University of Kansas. Moreover he obtained a J.D. with a background in

product liability and environmental law from the University of Wisconsin-Madison. He has also served at Vice President at Drake University and in the University System of Georgia, and has held senior management positions in the University of Wisconsin system. Dr. Coca.

JC: I'm gonna refer you to the paper. I'm not gonna use overheads. Now you have text here so you have something to walk away with, partly because I'm a little bit compressed. As I finish today, I'm going to have to dash out and I've got to get to San Antonio by late afternoon today to meet with a small company that's worried about medical devise compliance for European Union. That's another I work on. Delighted to be here. I was thinking as I was watching this, my father was very active in conservation, environmental matters. He taught at the University of Wisconsin - O'Clare. And, so he tried to steep me in it. I can't say that I learned as much as I should have. I'm probably more sensitive now to that. But I was born in a little town not too far from where John Mere was raised as a boy, and about 45 miles from where Oliver Leopold wrote his Sand County Almanac along the Wisconsin River. If you haven't read it, I recommend it. It's a very, it's a charming book. Now we're talking about legal issues here, and I'll try to cover them briefly. I just finished a book, this is a pitch, not on 14000, but it's called, " ISO 9000, a Legal Perception" that ASQ Press is coming out with. It's at the printers now. It will be out before the month is out. I only refer you to that because there are legal issues in 9000 that have not really been addressed, that are now beginning to materialize that I think 9000 is an outstanding structure to work with. It's just that it hasn't been utilized to - for that purpose. 14000 much more so has a standard where there has been a concern about legal issues. A number of attorneys were attached to the tag, the U.S. tag when it came into existence, Joe Casio is an attorney, a fellow who chaired the U.S. tag and a group called the Legal Issues Forum was created. They've met once here in Atlanta, and they meet periodically to try to consider what they think are some of the key issues. What I've done is look at some of those materials, also some issues that I've encountered myself, tried to identify them, give you something to look at that are in the way of legal issues, and I'll just run through those right now. The most obvious one, everybody, of course, is concerned about the Environmental Protection Agency how it's going to react to ISO 14000. They have been very actively involved in the formation of 14000. And then state EPDs, how they're going to respond to it. They, our course, as you know is an auditing criteria that were published back in December 22, 1995, implemented in 1996, and the question is implementation. If you have a system in place you discover you meet the nine points. I didn't list those in the paper, but you can find the reference the Federal Register. Meet

the nine points and you're compliant and you discover the infraction, you'll pay the costs of whatever damage were done, but you will not have a gravity penalty levied against you. In other words you won't have punitive damage levied against you. If you don't have a system but you discover the infraction, then same thing, you'll pay for the cost of the damage but there will be a 25% punitive damage, and of course, they'll look and see have you met the nine criteria and should criminal sanctions be invoked. And then, finally if you don't have a system and you don't find it, other people find it, your neighbor, your friends, your employees (it comes from there more often than any place else), then you could suffer full punitive damages and any evaluation if there is a consideration that malfeasance has occurred, some reason that criminal sanctions would be levied. We don't know how that's going to be implemented. That's very unclear. If that were implemented there be a much quicker drive to 14000 or systems like because it means there would be a benefit, an obvious legal benefit to having a 14000 system in place. One of the other issues, confidentially and legal protection of ISO 14001. Through discovery in the United States, United States Courts, you can access documents that go into environmental standards just as you can assess documents that go into the creation of ISO 9000. I get calls on occasion from companies who have had lawyers, one of them was a tire company I remember a couple years ago, looking for internal audits in the ISO 9000 system saying I want to see those. We're convinced that our client, his tire blew out on the road. There's got to some sort of smoking gun and an internal audit. If the internal audit is as it should be, very cryptic, just says with it is and there's a corrective action identified, there's not a problem. If the internal auditor says this is really a stupid idea, or I told them all along, then you've got a problem, That's always a problem. So, the documentation issue is critical at law and so how you document, what you document, what you keep, these are all things that you have to deal with. Record keeping becomes a major issue and how you mesh this with the requirements of 14000 or 9000. Potential of ISO 14001 to establish a standard of care, as Holly told you, we aren't at that point now, but if 14000 became very prevalent, and that's what a good company would do, then a company that doesn't meet the standard could be compared to it saying, you aren't really measuring up to what you should be doing. This has emerged in a funny way in ISO 9000, where—cited an issue in compliance engineering, actually the fellow who's the engineer lives someplace here in Atlanta, one day he called me and said that "I'm a forensic engineer", and I said "What's that?" He said "Well I go into situations where something has happened, work with a law firm, we'll find out what the issue is," in this case he mentioned the Chase Lounge, the lounge collapsed. It appears that inspection and testing were involved, training was involved. And so on deposition you sit down

with this person who is responsible, their lawyers, your lawyers, and then proceed to ask them a series of questions using the questions right of the standard. Do you do this, do you do that, do you do this? Of course the answer in most cases is no, and then the embarrassment is so acute, that even though a judge might not accept it in trial, people have been settling out of court, rather than take that kind of information to trial. So the standard is being used to formulate questions that are used then in a deposition, the deposition of course, we have a court reporter, and then now we have video cameras looking at the person perspiring and being inarticulate in answers. As you know attorneys are getting very shrewd at these sorts of things, and - so that is a concern. But, so what it says is there may be a point in time when the absence of a 9000 system or the absence of a 14000 system means that you aren't showing the standard of care that you perhaps should be showing, and you would be benefitted by having registration to - by a third party to the system or having a system in place. Duty of care is a little different thing. Duty of care often - I've taught lead auditors courses both 14000 and 9000 and have been a student obviously in those courses to get there and then participated. Too often I find the instruction will be, don't worry about guidance standards, they're interesting, they're helpful, but forget it as for as you know day-to-day basis. Well, guidance standards could be used in American law as part of a series, and if all of a sudden I said well what did you consider at this point, the guidance standard mentions these things. Did you look at that? If they didn't they could prove to very awkward. Better that you look at it, figure out how it fits into the existing system and so you've responded to it you can answer affirmatively to that question. You didn't show adequate duty of care in implementing a standard if you didn't look at the guidance standards. And so guidance standards are there that are beneficial. Guidance standards are getting a bit more complex these days, not only do we have them in 9001 - in other words 9000 4-1, or if you're in services, 9000 4-2, 140004, which was developed along with 14001, but when you get into European CE marking requirements there are guidance standards. For example, in medical devises that are fairly critical, that should be looked at there are standards that are terribly helpful, more helpful than anything else I could think to point to people. Banks and insurance companies as financial drivers. The issues forum met in 1996 with some bankers in New York, and they we're saying, well, you know we may consider this, if we're going give a loan we'd like to believe that the loan will be going to an acquisition or merger or whatever that would be sound. Last thing we want you to do is acquire something and find out you have a disaster on your hands. Give you an example. This last year in the Wall Street Journal , it was reported there was a company acquired by another company, in this case it was a medical devise company and the

original price was $500 million. Subsequent to that, it was discovered - these were pacemakers, that four people died and they had to explant 300 pacemakers, and so the acquiring company dropped the bid. They still acquired it, but they dropped the amount by $150 million. They acquired it for $350 million but originally they had agreed for $500 million. There is a financial - and obviously a financial institution looking over their shoulders, said we would never support you if you hadn't done or if you hadn't look at these kinds of issues. Well, transpose that to an environmental setting and you have the same sort of concern, or to a quality setting. I did talk privately with some insurance people. I gave a talk this last summer and a fellow came up later, it was a medical device conference and said we do give consideration and our underwriters will in fact reduce some of our costs for policies of companies registered to ISO 14000. So I called the gentlemen a week ago, chatted with him and he said, it is not a formal thing, it is very informal yet, but an underwriter will look at that as among the criteria to consider of giving you a lower liability insurance, because you have lowered their exposure. Interesting thing. Whether it gets formalized, we'll see, but that it does exist, yes. Potential liability of auditors, registrars - registered organizations for fraudulent registration. As Holly mentions, some people are coming and looking at compliance audits, are you complying with regulatory requirements, and among the fears that the auditors have is if I don't find this stuff or if I don't mention it if I see it, I can be personally liable, yes you can. Same thing with 9000 auditors as they would go in. The fact that you're looking at conformance to standard doesn't exempt you from something if you find a violation of which you are aware. If you don't find it that's another issue, but you get involved in that whole problem, and so— and there are registrars and auditors who have been quite concerned about that. Just like doctors and lawyers, if you fall down on the job you can be sued for malpractice. So can auditors and so can consultants, experience that same kind of legal benefit from exposure in the financial community or in the legal community. Conflict of interest. This is a problem that I think is improving in the United States. It was a problem first with 9000, where I remember getting called one time, I won't mention the company, it's not one well known, the guy said "I believe in one stop shopping", I said, "What are you?". He said, "I'm a registrar. We're also a consultant", and what they had is easily blurred the line, people were signing up with them, some fairly major corporations had signed up with them, because they could in one hand get a consultant, then we could go ahead and get you registered, and everything is fine. Terrible conflict of interest. You can compromise your life on that, and if you the company find yourself disadvantaged or losing or in some sort of legal battle, you would go back and sue these

people, because they misled you or got you involved in a situation that you found untenable. It is a problem with some notified bodies. I find them blurring the distinction and it's going to be interesting, I don't need to get involved in that right now. Notified bodies are third parties that conduct registrations for CE marking for the European Union for various directives, and some of them have blurred that. Now what's going to be interesting is there is a brand new mutual recognition agreement between the United States and the European Union that was signed in June '97, that goes into place hypothetically March - next month, and for medical devices in June, and one of the big issues is how these bodies, these third parties are appointed. And, they spent a lot of time in the agreement talking about how we remove them from being third parties, how we sanctioned them, how we suspend them - this whole regulatory oversight process is being looked at. So it's an interesting phenomenon and I assume one of the reasons is to deal with eliminating the conflict of interest of doing two things. Okay, if you have two separate legal entities that's another issue. If you can separate the corporate - you know the corporations so that they aren't interfering with one another, that's another issue, but those are some among the concerns. Legal compliance. This really goes back to one of the earlier issues, but if a registrar stumbles across something saying, "Good grief, this is a problem", one thing you're usually told in an auditing course, you must immediately go to management saying I have encountered this and I need to bring this to your attention, and you handle it internally as part of a third party, not to embarrass them, but say I have to acknowledge this and bring this to your attention. Role of legal counsel in ISO 14000 registration. I was called not too long ago from Los Angeles by a company and they said we'd like you to come out and do something, and we're gonna have, work this through our law firm, because we want to institute lawyer/client privilege. In other words, everything you learn about us will now be privileged. It isn't used for that. It's used for you. If you have a problem, whether it's a civil suit, criminal suit, it's a personal thing. You can't just somehow erase the entire corporate memory by having a lawyer sitting in on the process. The courts will quickly strike that down. But, that was what the guy had in mind. In this case it was a machinery directive company. They wanted to go to Europe and they were aware that when you create a technical file, you can access that file through discovery in an American court of law. So they thought by having a lawyer present then they could say, lawyer/client privilege therefore you can't look at the technical file. Won't work. I, I - declined the invitation. I thought it was too bizarre to get involved with, but not for that purpose. Acquisition and due diligence. If you're going to acquire something it would behoove you if there was an environmental issue involved, just being a sound financial institution or a sound corporation wanting

to look at the acquisition that in due diligence you would look at their environmental compliance, just as you would look at how sound they are financially. It would be among the factors that would be considered in due diligence, and some companies are beginning to look at that. Especially, if they have a great environmental exposure. And then legal issues in regard to advertising and labeling, this is one which is a little fuzzy at this point in time. What can you say, what can't you say, are you lying when you say something. Courts are getting a little bit more stringent on whether puffery is involved, and if the puffery would cause somebody to buy something they wouldn't have bought otherwise, is that acceptable? So we're kind of in a transition phase. In Europe they're much more severe about that, and in fact a number of Europeans will want to know whether you have a registered system before they will consider buying from you, registered to 14001. International trade - number of issues here. Probably the most prominent that I deal with, I was called by a company a couple days ago, signed a contract, not a company, it was a trade association, because they are concerned about the European packaging, packing waste directive that becomes mandatory in 1999. It is in fact premised after the German Waste Ordinance, which is in existence right now. You cannot send certain products into Germany, they will be refused, and they will be shipped back to you at your cost, and then you'll have to repack them and reship them if they don't fit the environmental criteria for going into Germany. Many companies have responded to that, it will be spread throughout Europe, and as you're aware, Europe is going to be expanding itself. The next five countries coming in with about 4 to 5 years are Poland, the Czech Republic, Hungary, Slovena, Estonia, and then they keep saying Cypress, those countries are also then adding the CE marking requirements, the packaging waste requirements, so that expansion of European Union, we'll be looking at some of the same requirements. There already exists a battery and accumulator's directive. Batteries can only comprise - be comprised of certain kinds of elements. They also must be disposed of in accordance with European law, separately, and even in the U.S. you will find now places like St. Paul, Minnesota, saying batteries must be disposed of separately in the waste stream. It can't just be thrown out with everything else. And then the Eco Label award, this is a voluntary award, but look how, look how expansive it is. Bothering a number of companies because you could apply for this, then you get a little - it looks like a little daisy with little ECs around it and shows that you're environmentally sound, so if you made a dishwasher, you could say this is the most environmentally sound dishwasher made in the world and I have the recognition of the European Union to back me up on that point. And some people are saying we don't like the criteria, the ecological criteria. It is voluntary, but it covers already washing machines, dish washers,

paper towels, toilet paper, soil improvers, laundry detergent, light bulbs, indoor paints and varnishes, electric dryers, refrigerators, bed linen, and T-shirts and copying paper, and the list will increase. So it's an interesting directive and it has bothered some American companies, because it says, it seems like a restraint of trade well, I'm not so sure about that because you decide whether or not if you want to participate. And then risk analysis, this is an interesting thing. If you conduct a risk analysis in creating an ISO 14000 system that eventually begins to put the onus on anybody else having a management system or needing a management system and also conducting a hazard and risk analysis for their operation. We're at a very fuzzy phase of that right now, but if it becomes fairly dominant it will happen, in my opinion right now, because of the European machinery directive. Very few machinery companies can afford not to be using the European standard for risk assessment, the EN1050 for machines, simply because it is the standard of care that most people - or the standard practice that most people are moving toward. Therefore, if you don't conduct a risk analysis that is comparable and you have an accident you could be questioned about whether you're meeting state-of-the art, and what your competitors are meeting this point in time, as a matter of standard of care. Court settlements, the only thing here we have a Canadian court a couple years ago, that in fact that the judge stipulated in Alberta that the requirement for the company to continue operating is that it had to create an ISO 14001 EMS system. So we're at a very interesting phase now. I guess it's saying in summary that the law goes both ways. You could find yourself having a problem if you don't comply with the standard if the standard becomes a matter of common practice, because then you're not meeting what everybody else is meeting in terms in what you're doing with your company and how you're putting people exposed to it. We also have some very fuzzy areas. In my opinion, a documented system is a safer system, because you can hand to your attorneys if you're ever sued something to say here's what I've done. And that's what I do with a number of companies saying I would rather have good sound documentation, intelligent documentation, not little cryptic notes by people saying this is stupid, and that would be beneficial. It would put you in a more defensible position. And so, I think it can be highly beneficial but as Holly says we're in an early phase, a lot of people are afraid of it, almost like if they don't know what I'm doing maybe I'll be okay, but of course if they find out what you're doing and it's not okay, then you may be in more serious trouble. So, there you have it. I'm sure that a year from now, two years up from now, and three years from now that snapshot will change and we'll have some more to add to it. Thank you very much.

DR: Thank you very much Dr. Coca. At this point in the seminar we're

going to have a question and answer time. This will be moderated by the Dr. McIntyre of Georgia Tech. Dr. John McIntyre is the Director of the Center for International Business Education and Research (CIBER), a national censor. He is also a Professor of International Business Management and International Relations. He holds joint appointments in the School of Management and the School of International Affairs at the Ivan Allen College at Georgia Tech. He has received his graduate education at McGill, Strasbourg, in Northeastern Universities, obtaining his Ph.D. at the University of Georgia. Dr. McIntyre.

JM: Thanks Darrel. ...full to kind of encourage you to raise questions. We have visitors from Japan. We have a lot of expertise. They are not here for very long. I know a number of you are probably trying to focus on the Japanese market which still remains the #2 market in technology in the world in spite of the ups and down of the Asian economic region and also you probably have questions from some of my colleagues at Georgia Tech. Our friend, Jim Coca, just left. As you know, he had a plane to catch so the floor is open for questions and hopefully answers.

Yes sir, if you could identify yourself and I don't know if you need a mike or not. Because they are taping. We're going to have a transcript of this, by the way so.

Q. Maybe Dr. Coca would have been best for this but maybe our other experts can help. One of the things that may be holding back US Companies in ISO 14001 is we do have EPA and EPD around here, but I don't believe Japan has a Superfund and the peculiarities of the Superfund laws make it somewhat difficult to defend yourself and they also make you liable for things that you may not have done and I would think some of the registration and compliance activities and the audits may bring to light things, may bring incredible liabilities to a company and is 14001 a defense or remedy for this or is this a problem that the experts see?

JM: Okay, I think some of our Japanese guests might be, should field that question. Perhaps Mr. Ichikawa or..? I think you probably can stay—well okay. Maybe you might want to circulate the mike so that he has it. Is it working? Can use this one here. If you want to come here because I think it's the only mike working.

A: Very, very difficult question but as you say, we don't have a Superfund in Japan. Peoples and also, ... are very much concerned about that kind of issues and Agency of Environmental have now guideline for surveying the land contaminations. So up to now we don't force the surveillance for the land contamination, but we recommend to follow

the guideline or Agency of Environment now and Japanese companies are now very much concerned about that situation. Is it alright for your question?

JM: Holly, you want to give follow up to that? I think you have to come up here.

HL: Just as a follow up and also clearly marking myself as a proponent of 14000, I think your question gets back to the issue of compliance audits versus conformance audits, but also I think one of the primary benefits of a 14000 system is that you change your culture from a reactive to EPA and EPD, and RICKRON and Superfund and everything else into a proactive system. And if you implement the EMS model as defined by 14000, I think you'll find that the benefits in terms of your proactive anticipation of issues will far outweigh any possible discoveries of things you're not doing that you should be doing because this system is designed to help you do that.

Q: Except with the Superfund, if you try to defend yourself your damages triple.

HL: Yeah and I don't have a good response for that. Is there anyone else? Susan Graff here used to be with EPA and perhaps you can address that Susan.

SG: Yeah I'm Susan Graff. I'm President of Environmental Resource Services here in Atlanta and as far as your Superfund liabilities go, I spend about 8 years in the Superfund program and I'm doing what I do now because I believe there's significant advantages to being proactive and recognizing where your exposures may be and the systems do not require documentation of performance. They require documentation of process to be registered. So I think if you think about how you're documenting in order to have a continually improving system versus one that's monitoring performance for compliance, you can overcome that.

JM: Okay. Do you want to follow up to that question? Yes or no? Okay. Other questions. Yes sir, if you could identify yourself. I think the mike is coming your way.

CR: I'm Christian Roth and I'm an environmental management system consultant representing DMV here in Atlanta and I have a question for Mr. Sano. In your presentation this morning, you mentioned that the Japanese National Government offers subsidies for small and middle-sized companies introducing and I suppose implementing an ISO 14000 system. Could you just tell me a bit more about the details of that system? How many of the 600 companies in Japan, for instance, have

applied and got subsidies in their implementation efforts?

S: I said now as government consider, provide subsidies so now about 680 company get certificate. I'm sorry. Today I want to have a more detailed information so if you need us later, I get you information. Now, government consider so maybe 600 company don't get subsidies.

CR: And those subsidies I assume are to encourage training and development of procedures and documentation systems? The 600 companies receiving METE subsidies, would that be in the nature of funds to encourage education in the company? It's not that unusual. It's done in the European Union, by the way. There are funds within the European Union level that are designed to encourage the diffusion of ISO norms and educations. But I know it's not the case in the United States, although at the state level, Holly, there might be some state encouraging that. Maybe California. I don't know that for a fact at all. I'm just speculating. Is that correct? You seem to be indicating that funds being provided by government entities in the US to encourage the diffusion and education on ISO issues at the state level. So there are pilot programs at the state level?

H: It's not a lot. I mean it's insignificant.

CR: It's a very small carrot.

A: I just would like to clarify that this subsidiary thing is still under consideration. It is not actually done yet. The form of subsidiary, is as Dr. McIntyre said, that education and training that is one thing and giving information is another thing. And they are considering the pilot plan to implement 14001.

JM: Okay go ahead please.

A: I think from 618 organizations, about 20 are small and medium sized organizations and to my impression, small and medium sized organizations makes very simple and efficient system, not the same as big organization. Maybe you can understand and even they are getting good profit from that system. I know some other example, because usually they get the profit or maybe recover the cost of certification within one year or so making some improvement like recycle or energy reduction or paper reductions.

JM: Next question. Yes, sir.

JP: My name is Jack Payne. I'm the Director of Environmental Health and Safety for a consulting firm here in Atlanta. The way I understood with the Japanese implementation history for ISO 9000 they were

behind US and now with ISO 14000, they are ahead of the US.

A: I think so.

JP: And Holly's comment is within the US, there isn't a driving force. Therefore my question is, #1 how did Japan decide to jump on ISO 14000 with full force and #2, now that you have 600 firms ISO 14000, are you going to enforce that to a US firm if the US wants to trade with Japan companies?

A: Excellent question. I suspect the international penetration of Japanese firms and their dependence on foreign markets and the globalization trend is a partial answer to that but I will defer to our Japanese colleagues to answer that question.

A: Maybe this is my opinion. In case of ISO 9000, we were much behind compared to US so we, we some of the company loss a chance, the business, business chance, so we deal with. That is one reason and second reason is I think the people's conscious, consciousness toward environmental issues mainly come from the landfill, waste landfill issue and because Japan, the size of Japan is very small, we are now facing serious landfill program, people realize, understand reason why we need, but most people say not in my backyard. So, so the cost of waste treatment going up extremely and limitation will be coming few years more. So the peoples and society newspaper have very much concern about environmental issues. So maybe that is cause why we ahead of ISO 14000.

JP: Thank you. The second part is between the US trade and Japanese, are you going to enforce the ISO requirement on the US firm that sell products to Japan?

A: I give you one example. Recently I, we NEC, made a contract with one of the biggest computer maker in US. Then we stopped license production to them so they...it was stopped ...They request, not request, the become us to consider one for the original one so actually the factories is located in the Philippine, but we are now start to get the certification so maybe same thing happen to our company. We are also starting what we call "green purchasing" to the supplier and that is, know how to say, the movement, trend movement, I think.

JM: I think it's interesting what you just said. If you take into account that if a Japanese corporate headquarters in Japan prescribes ISO 14000 and then an increasing amount of Japanese manufacturing is done outside of Japan, this is not a new trend, but it is one that's picking up for reasons, I think to do with exchange rate.

I think to do with labor costs, I think to do with logistics and so on, then it's kind of interesting to consider Japan as one of the forces behind the ISO 14000 movements given the general nature of manufacturing for a Japanese global company in the rest of the world and so the standards may be initiated or the idea of implementation may take root at corporate headquarters and diffuse itself through the global network of Japanese manufacturing sides. And to that extent Japan would be one of the leading companies at the corporate level pushing for it given the percentage of Japanese manufacturing being done overseas in Asia, southeast Asia and the rest of the world. So I think it's a critical question you raised. Yes Mr. Gray.

JG: Again, I'm John Gray with Blue Circle. I have a question for Mr. Sohara. Do you have a cost to implement the environmental management system at your 38 domestic sites in Japan. I guess I would break that out into cost, in the system cost, the cost of training, and then the cost of getting the external certification? Ballpark figure.

S: As I explained to you, we organized a project team and land by ourself so we don't, we don't have a contact with how you call, concerting, consultant. So we do ourself but making a documentation and education, only for documentation in my case. I was in Japan. The plant has 6000 employees and we got certification last year. So you know that prepare everything. We have environmental department in there. I have six members so roughly I can say it takes 3000 hours for preparing everything, by ourself. So I cannot calculate, come back to money. So okay?

JG: Okay.

S: Thank you.

JM: Very good answer. There was a question over there that I kind of overlooked at that table in the far corner. The second gentleman there is you could...

Q: First of all thank you to all the Japanese who came to share with us their experiences today. I really wanted to ask about the other carrot. You shared with us that Japan is considering monetary carrots to induce small or medium companies to implement 14000. Mr. Sano also indicated that there are mitigations for regulations for companies implementing 14001. Share with us the experience Japan has had on that.

S: I said in, from my presentation, Kanago prefecture in Japan, it's

really good prefecture for certification for ISO 14000, 14000. The prefecture now were considered mitigating regulation for those company have certificated for ISO 14000. But, so now, considerating, so I can't really explain in more detail, actually. Okay?

JM: Okay one last question and then a few closing remarks. Yes ma'am.

SG: Yeah Susan Graff again. This question is for Mr. Sahara relating to your internal audit program. It looked like from the very get go your company had a committed policy to internal audits and saw the value and in the United States that seems to be one of the most practical elements of an environmental management system that companies are implementing first. You mentioned you changed your auditing program from one that was performance based more to systems based. Were there a few major things or major aspects you could point out about making that change because that is a big culture change in how you operate in conducting an internal audit?

S: I think I explain like this. We had, we have internal audit focus on legal companies and environmental performance. But now after introducing ISO, we expand to systems side also so we see....major auditing in internal audit.

SG: So has there been a reduction in the scope of the audit focus more on systems and less on performance?

S: No. No.

If I said system oriented method, if he says a compliance with registration up to now, just inspect the results, but regulation actually set the criteria, what is important, how to keep the criteria. In that case, we need system. The system not to violate regulations. That is the system. So, for example, if you keep the regulation, we set severe criteria, company criteria. For example, we consider about the appropriateness of the criteria, and also we monitor and take actions before violations what actually we are doing and we require to have such system to keep the violation. So in that sense, maybe, well I should say ....to have a system rather than not to violate or to comply with the regulations.

JM: Thank you. Well I think it's time for closing remarks and let me to see if I can sort of soar a little bit above the presentations we have had and close the workshop. First let me thank the speakers who did a great job of bringing us up to date and raising some of the critical issues that surround ISO 14000 in a comparative perspective. I wanted to in this context also thank them for making available their papers and bring to your attention two papers pro-

vided, kindly provided to us by the National Institute of Standards and Technology of the U.S. Department of Commerce, the first one being ISO Environmental Management Standardization Efforts, a US Perspective; the second one being the ABCs of the US Conformity Assessment System by Maureen Brightenberg, again of NIST in Maryland.

Second, to recap, we had the presentations in the first part of the morning from a Japanese government official on leave of absence with us at Georgia Tech, from a representative of a leading Japanese firm and from and industry association. We have tried to balance that by the US side being presented in terms of ISO 14000 issues and having three speakers. So the seminar was a comparative one and we tried to kind of contrast and compare some of the different approaches and the different, perhaps not methodologies, but the different frames of mind with which you can approach implementation of an ISO 14000 system. What we have learned this morning from the six presentations is that without a doubt much work has been done and fairly fast given the history of ISO 14000 in defining best practices and world class standards. Second, that Japan in matters of ISO 14000 seems to be leading the way and there are reasons for that which probably the literature on comparative management and cross cultural management provides best answers to.

Third, we have learned that much work remains to be done in educating, in perfecting the standards, in auditing and certifying sides and I think a number of you are in that business and I think you will probably agree with that remark. Also, we have learned that the challenge is to keep the momentum going as we close the century and as we move into a world that is even more interdependent and pollution sensitive and that momentum can be kept going either by having government mandate norms and regulations, the top down approach I guess, the government fiat, which is really not very much a part of the US tradition in matters of environmental standards, EPA aside, when it comes to actually getting companies to be involved in this process in the long run. Or by a voluntary compliance approach by key industry leaders. Now without a doubt, if you think about it, if you are an exporter or if you are involved in international business, ISO 14000 compliance provides you with a competitive advantage. Also for countries joining in creating standards that are common across boundaries, prevents what I call the event of known tariff barriers, that is to say that we are going to see systems that are comparable, that are compatible and that a particular nation or a particular national administration cannot use as a known tariff barrier to entry, to gain access to a particular target market overseas. So it is to the advantage of everyone interested in being competitive and crossing boundaries with products and ideas to be

involved in the ISO, in the ISO game for lack of a better word. This seminar has been very competitive in many ways and we have seen that there are similarities and differences that characterize the Japanese and the US approach. Some of the differences are fairly obvious. The level of globalization of firms, their dependence of foreign markets, different in the US, different in Japan although definitely in the US the share of the GNP derived from trade has increased drastically in the last 10 years. There are also differences relating to population density when it comes to environmental standards. The Japanese, of course, are facing a very different situation than we are here. The differences relating to the principals of cooperation and harmony, how do you bring suppliers with manufacturers, with customers, with stockholders to collaborate and share information. I think the Japanese do that very well and they have a long tradition. I think the US might learn something from the Japanese approach to building a harmonious network. I think one of the presenters from Japan mentioned how do you turn a network into teamwork and that is critical, it seems to me, in terms of ISO 14000 implementation.

Finally I wanted to say that we at Georgia Tech, whether we are on the research side of the institution or on the outreach, business outreach side or on the teaching side, we are really committed to focusing on those issues and we encourage you to let us know how we can be of help.

And finally in closing, I would like to present to our Japanese and non-Georgia Tech guests, a book which is the result of some research we have done at Georgia Tech on the Japanese standard system so I will not ask you to come up but I will give it to you afterwards. But for Mr. Gray and for our Japanese guests, we will be glad to present you with a complimentary copy of a book and on that note, I'd like to close the session and hope to see you again in as large a number as you are today at the next meeting focusing on ISO norms. Thank you.

In addition to that closing, could you please leave the questionnaires that were handed out at the beginning of day on the table in front of the entrance. Thank you very much and have a nice afternoon.

End of Conference