

# DOWNLOAD PDF QUALITY CONTROL SYSTEM FOR X-RAY ANALYSIS AT INLAND STEEL INDUSTRIES JOHN E. MARTIN.

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*Papers presented at the Symposium on Computerization and Data Management in the Metals Analysis Laboratory in Nashville, 9/24/86, sponsored by ASTM Committees E-2 on Analytical Atomic Spectroscopy and E-3 on Chemical Analysis of Metals.*

In the overall program, emphasis is placed on three major activities: Both short- and long-term activities are pursued in the program. The effects research program covers the following categories: Your summary it Jo be usoc fen tSoiu purpose t. The purpose of the extension of this contract is twqfold: Your tummoiy it Jo be uiod lot these purposes. The main purpose of these studies are to provide jungentlyrneeded. National estimates can be determined from these same health categories. More complete consideration of mortality, morbidity, subclinical illness categories is urgently needed. Pollution monitoring data and population, at risk estimates from various levels of major air pollutants is imperative. Your summery n Jo be used lor these purposes. Acute lower respiratory diseases. Technical reportsVelucidatlng the"1 dose-response relationshlpLbetwejn; air pollutants and acute lower respiratory disease frequency will provide necessary health support for. Decrements of pulmonary function have been 1 inked. Children attending elementary schools located Uv. Thus the relativetveffects of season. These studies are designed to qualitate the dose-rresponse relationship between the frequency of acute irritation-symptoms. Approoriute aadjustments are made for reporting bias. Your summary it Jo be used lor these purposes. These prospective studies are designed to qualitate the dose-response. Appropriate demographic information is obtained by personal interviews prior to entry into the study.! Panelists then complete Weekly diaries recording all set frequency and severity of asthma symptoms. Air quality data will Jbe. Your summoiy is Jo be used 01 the so puiposes. Hence, daily mortality models complete the full spectrum of biological responses investigated in the CHESS program.. Your summary it jo be used The greatest, concern. Tlris project is to develop a rapid- toxixologic screening system, using self cully. These preliminary data provide the basic tools with which studies of animals or humans can be undertaken.. Your summary it jo he used tor these purposes. Many studies have demonstrated increase incidence of disease. Agency - Office of Research and Monitoring: Your summary i I Jo be used or ihesc. The end product, of this task is an in- tramural human environmental exposure facility. Expired air and blood COHb levels will be measured tie-tore and after each exposure. Blood changes could be determined relatively easi. This study is designed to determine the role of carbon monoxide in the natural. In a control method half the pigs will be exposed to RpCO. Your summary is jg be osod lot these purposes.

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## Chapter 2 : Items from : Sussex Research Online

*This month's Technology Forum looks at the topic of X-ray spectroscopy and the trends and issues surrounding it. Joining us for this discussion are John E. Martin, with Spex SamplePrep, Bob Clifford, with Shimadzu, Drew Hession-Kunz, with Innov-X, and Mike Tice, with Strategic Directions, Intl.*

Environmental Protection Agency policy and approved for publication. Mention of trade names or commercial products does not constitute endorsement or recommendation for use. The technical program consisted of presentations, held in 13 separate sessions, on recent advances in the measurement and monitoring of toxic and related pollutants found in ambient and source atmospheres. Covering a wide range of measurement topics and supported by 33 exhibitors of instrumentation and consulting services, the symposium was enthusiastically received by more than attendees from the United States and other countries. This volume contains the papers presented. The keynote address to the symposium is also included. Measurement and monitoring research efforts are designed to anticipate potential environmental problems, to support regulatory actions by developing an in-depth understanding of the nature and processes that impact health and the ecology, to provide innovative means of monitoring compliance with regulations and to evaluate the effectiveness of health and environmental protection efforts through the monitoring of long-term trends. The growing number of responses to this symposium represents an encouraging step in the enhancement of our current measurement and monitoring capabilities.

Gutknecht Robert McCrillis R. Bramen Judith Harris D. Scott Steve Bromberg Ronald A. Smith W, J, Dunn J. Pace , Second Vice Chairman R. Mullins, Chairman Mark S. Johnson 12 Jane C. Chuang 21 Andrew E. Bond 30 James Neely 35 J. Brasch 42 Jeffrey W. Childers 57 Steven B. Hawthorne 63 Robert D. Raza 77 Mallory P. Humphreys 85 91 98 Delbert J. Vossler Eric Peake Stanley A. Collins Richard E. Holdren William A. McClenny Jitendra J. Shah Robert L. Seila Robert A. Buedel William R. Betz Larry D. Ogle Joseph P. Krasnec Terri V. Howe Arthur Greenburg Douglas A. Mackay Kurt Anlauf J. Gholson Bart Eklund J; T. Binstock Alvia Gaskill, Jr. Merrill Larry D. K. Jain Jeremy N. Chanmugathas xii Asbestos Fiber Loss from Air Sampling Cassettes: A Case Study William E. Nishioka Hermann Schmidpott P. Johnson Raymond C. Denyszyn Robert E. I looked over the subjects you will be discussing over the next few days, and was impressed by the breadth of coverage and the diversity of topics on measurement systems and approaches, including techniques for ambient air, indoor air, acidic deposition, and source monitoring, I believe that measurement serves a critical role in environmental protection. If we view the dynamics of the regulatory process as a system, then measurement of environmental conditions is one important "feedback mechanism" by which we can judge the effectiveness of these programs in reducing the concentrations of pollutants that may come into contact with man and the environment. Viewed in this way, the data from measurement systems help tell us how much progress we are making in our efforts to control environmental pollution, and thus provide guidance for us in modifying our approaches to make them more effective. In addition, as we face some new chemicals of concern, measurements of pollutant concentrations help us to identify the sources that need to be controlled. Let me repeat a metaphor that I have heard from monitoring specialists: The physician collects data essential in helping him diagnose the problem and recommending a course of treatment. In environmental regulation, we make similar measurements to characterize problems. Base upon this characterization, we develop a control approach. Finally, we use environmental measurements to monitor our progress in correcting these problems. Clearly, environmental measurements are part of the entire regulatory process. Existing environmental programs articulate as their goal the protection of public health and welfare. Public health clearly refers to human populations, while public welfare has been interpreted as referring to the nonhuman component of the environment, for example, biota and materials. If we consider the human component of environmental protection, then we need to consider both the concentrators and the manner by which pollutants actually reach people. Questions that are fundamental to estimating the risk of pollutants to the general public are:

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Even if the effects of a. In essence, our lack of adequate exposure data prevents us from completing the risk equation. For the criteria air pollutants, extensive monitoring programs are maintained to measure pollutant concentrations outdoors. These data have been useful for guiding existing regulatory programs, but it is understood that the data collected by these networks reflect only outdoor ambient conditions that may be quite different from the actual concentrations to which people are exposed. These findings helped raise the question: To measure the exposures of everyone in a city of 3 million persons would be expensive, so a simpler approach had to be found. This search for a better method gave birth to the idea of combining probability sampling with environmental monitoring. If one could measure the exposures of a representative probability sample of the population, say persons, then we then should be able to make inferences about the exposures of the entire population. That was our initial reasoning. A second requirement was a personal monitor that would be carried easily by every participant. Moreover, we wanted a "smart" monitor -- one that could distinguish between microenvironments such as commuting, home, and work. These concepts led to the carbon monoxide personal exposure monitoring field studies conducted in the winter of 1980. In these studies, a screening telephone survey first was conducted of 5,000 members of a representative random sample of the population of each city. Then, from this first stage sample, a second stage probability sample was selected. Extensive statistical analyses and publications have resulted from these studies, with numerous findings of importance to the Agency and the field of risk assessment. The Denver-Washington, DC, carbon monoxide exposure field studies are illustrative of what is called the "direct approach" in the newly emerging field of total human exposure assessment. In a TEM study, one measures directly a set of target pollutants that come into contact with the individual, regardless of whether they arrive by air, water, food, or skin. For CO, the only route of exposure is by air, so air alone is monitored. For some toxic pollutants, such as chloroform, the exposure routes include air, water, and beverages. There are four basic ingredients of a TEAM study: All components seek to determine, with known accuracy, the frequency distribution of exposures of an urban population. At the present time, the TEAM studies have collected data on the exposures of the population to important toxic pollutants in four states, representing 10 million persons in seven cities. Additional studies now underway in Baltimore covering volatile organic compounds and in Jacksonville covering pesticides will extend this knowledge data base further. Direct measurement of personal exposure presents serious technical challenges to the measurement community. Personal exposure monitors must be small and unobtrusive, light-weight, quiet, rugged and insensitive to vibration, able to operate reliably in untrained hands for long periods without external power, capable of generating observations of known accuracy, and, ideally, capable of providing continuous data. The technical and scientific difficulties in meeting such demanding criteria will be a serious challenge to environmental measurement specialists. Despite the many formidable technical obstacles to developing personal monitors, a number of successful monitors already have been developed and field tested. Even though some problems remain, notable successes have been achieved in measuring carbon monoxide, volatile organic compounds, and pesticides by personal monitoring. These successes notwithstanding, additional methods development research is needed to develop continuous monitors for nitrogen dioxide, passive carbon monoxide monitors, inhaled respirable particles, active and passive monitors for formaldehyde, volatile organic compounds, pesticides, and polyaromatic hydrocarbons and related compounds. Although the direct measurement approach is invaluable for determining, with known accuracy, the exposures of populations and the sources of these exposures, an alternative approach -- the Indirect approach -- can be used to estimate exposures without large-scale field studies. To apply the indirect approach, one needs data on the microenvironments people ordinarily visit and the times people spend there. A microenvironment is a location of statistically homogeneous pollutant concentration, such as CO concentrations in a parking garage. By combining microenvironmental concentrations with human activity patterns, it is possible to calculate exposures. A human activity pattern-exposure model has been developed for CO and has been used successfully to predict the exposure distribution of the population of Denver. Despite success with this one model, no validated exposure-activity pattern models yet exist for any of the other

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pollutants. Additional research is needed to develop, test, and validate exposure models for toxic chemicals. This could yield the data needed for making reliable risk estimates. With such a frequency distribution, it is possible to state the proportion of the population above any concentration range. Using these data, for example, a regulatory program can be designed with the goal of maintaining some finite percentage of the population below some target concentration. The data also have important policy imp! These studies are showing the greater importance of indoor air and human activities in the exposure equation. For example, recent exposure studies indicate that reducing human exposures to tetrachloroethylene can be achieved more effectively by reducing the contact people have with freshly dry cleaned clothes than by controlling industrial point sources.

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*Measuring of Hazardous Pollutants Measuring Group II and III Source Samples Conduct Interlaboratory Tests to Evaluate Performance Develop and Produce Test Materials for Use in Intralaboratory and Interlaboratory Quality Control Activities Data Program for Method Standardization and Equivalency Develop Guidelines and.*

Part of the hull replacement process involves the use of an automatic welder. Catharines, Ontario, Canada, ratified a five-year contract with Port Weller Dry Docks last fall, in hopes of providing the stability the company needed to make major capital improvements so they could be more competitive in the shipbuilding and ship repairing industry. It guarantees employment levels of to Boilermakers year round for the next three years, and if all options are exercised by Canada Steamship Lines, the work will continue for up to five years. The new hulls are expected to add 25 years to the lifespan of the Great Lakes vessels, all self-unloaders. The project calls for cutting the vessels in two, just f o r w a rd of the engine room, and replacing the engine forward sections, bow through cargo holds. New features should also shorten maintenance periods, allowing for a boost in pro d u c t i v i t y, said Canada Steamship Line President Ray Johnston. He reports that early negotiations of a five-year agreement between the Boilermakers and Port Weller Dry Docks played a major role in securing the contract with Canada Steamship Lines. He congratulates the management team for a job well done in securing this contract and also the negotiating committee and Local members for having the vision to ratify their future. B rown is joined by International P resident Charles W. Jones and International Vice President Sandy MacDonald in praising both the company and the Local negotiating committee and membership for their excellent leadership in making Port Weller successful. Their teamwork has resulted in more work for the shipyard, job security, and better conditions and prosperity for all concerned. They started out with two locals, then branched out province by province, until they formed the Quality Control Council of Canada, a national council to represent these workers in It all began in , when nondestructive testing technicians working in British Columbia approached the members of Boilermakers Local and United Association UA Local about becoming organized. The two unions joined forces and collectively bargained the first pro v i n c e wide agreement for the NDT industry. Next, they organized the workers in Alberta, securing a collective agreement for that province. The organizers then broadened their horizons and set a national council as their objective, forming the Quality Control Council of Canada QCCC in , signing the first national collective agreement with the Non Destructive Te s t i n g Management Association in Twenty-five years later, the QCCC is stronger than ever, with 15 local unions participating from coast-to-coast, and over 1, members. Council members include representatives from both parent unions. Local union business managers, or their representatives, serve as delegates, with Phil Lane and Ben McCann serving as organizers. Two founding representatives have been designated as life members â€” UAmember Russ St. Eloi and Boilermaker Robert MacIntosh. We started our pre-outage work on February 2, , and finished on April 4, We peaked at just over Boilermakers on site and had only one recordable injury during the outage. Our welding was outstanding. We had a total of 3, welds with only 13 rejects. This is less than a. The weather was bad at times, and our work required us to be outside in the rain and cold. I never heard anyone complain, the Boilermakers just kept working to help us meet our schedule. Once again, I would like to say to the membership of Local â€” thanks fellows for your help and a job well done! The Boilermakers played a key role in our performance, and I want to express my apprecia- tion to all of your members. Some of the successes we are proudest of include: The Boilermakers were the primary craft involved in retubing the main condensers at SQN in These were extremely important projects for the long-term reliability of the two SQN units and were completed in US record times of 35 and 36 days respectively. The refurbishment also resulted in power increases of three megawatts for each unit. TVAN appreciates the professionalism and support the Boilermakers brought to this project. Through efforts of this type, TVA will be able to meet the challenges and competitive pressures of the future. TVA Nuclear Electric locomotives such as this damaged car depend on the members of Local to get

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back on track. While wreck repair takes top priority, these craftsmen also play an important role in other facility work. They modify the framework around locomotive wheels to create a smoother ride, improve passenger safety by reinforcing the couplers that attach locomotives to coach cars, and work on the multi-million dollar locomotive shop renovation project. In addition, Local President George Coleman reports that these skilled tradesmen also designed a locomotive snow plow that has been adopted by numerous railroads around the world. Photo by Photo Features Ltd. Joe Meredith, Construction Division director, earns reappointment to national boiler inspection committee. The committee consists of 15 members chosen from production, commerce, finance, agriculture, labor, services, small business, and state government. Working out of his office in Fairfax, Va. This will be his second three-year term as a member of the committee, which develops codes for the maintenance, repair, and alterations of boiler and pressure vessels. Meredith joined Local 100, Knoxville, Tenn. He became the first recipient of the Paul Wedge Award as the outstanding apprentice for the Southeast area in 1978. In 1980, Meredith was appointed International representative and became an assistant to the Construction Division director in 1982. This is Hayes second term as a labor representative on the eight-member committee of business and labor representatives. Hayes brings to the board a long history of working collaboratively with labor and management, through his 39 years experience as a business manager, assistant business manager, and construction worker. A second-generation Boilermaker, Maloney joined Local 100 in 1978, and is a graduate apprentice. He served Local 100 in numerous capacities, including as business manager until his appointment as International representative for Eastern Canada. Maloney has also served as vice president of the Ontario Provincial Building and Construction Trades Council and is a member of the Multi-Employment Benefit Council of Canada and many other organizations. Simply put, your voice is your vote. Any member from Illinois or Northwestern Indiana who wants to join the new chapter can contact Local 100 at 708-438-1234. At the meeting, the trustees signed a trust document developed to secure funding from employers and members to sustain involvement in the elective and legislative process. Since LEAP committees were first formed in Canada in 1978, International Vice President Sandy MacDonald has been stressing the importance of marketing the Boilermakers and making communities, employers, and owner clients aware of who we are and how we can help. Part of that marketing strategy is increasing our involvement through an effective LEAP committee so we can be heard at the municipal, provincial, and federal levels of government. Part of their duties as trustees will be to make members aware of legislative issues that directly affect organized labour, the Boilermaker member, and their families. The advice we hear is that only low-skill jobs will move overseas; people with college educations and technical skills will still be needed in the U.S. Most disturbing, though, for U.S. A good example is the Thomson Company, which makes televisions at a giant assembly plant in Juarez, near the U.S. Until April 1, Thomson sent units to a Bloomington, Ind. But now, aided by a computerized assembly line and local technicians trained by the company, the Juarez plant does all the work. By concentrating production in Juarez, Thomson has reduced their wage costs considerably. Speaking to the Wall Street Journal, Charles Robinson, a workplace consultant for Total Systems Development, explains how corporations exploit Mexican workers at the expense of workers on both sides of the border: Here you get a line worker with the same analytical skill as an engineer in the U.S. It may not be ethical, but it is profitable. The National Office of the Labor Council for Latin American Advancement (LCLAA), an organization sponsored by the AFL-CIO, granted the local chapter in November, to encourage the general public to register to vote and to promote organized labor in the community through the formation of coalitions with labor unions at the local level. Local Recording Secretary Daniel Fraley, who is a charter member of the new LCLAA organization, thinks any union can gain more ground in their community by working together with other unions. He said area union officials had been discussing the form- Quebec, Newfoundland plan big energy projects to be closed because they are old and expensive to operate. They will build a hydroelectric generating station on the Churchill River and expand an existing station at Churchill Falls, generating 3,000 additional megawatts of power. The project will be jointly owned nearly two-thirds by Newfoundland, and just under one-third by Quebec. HydroQuebec will sell the power to the U.S. The Sable Island natural gas

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project, expected to start up in , will offer a cheaper source of natural gas for New England. At present, gas is piped to the region from the U. Canada is already shipping oil to the U. The nearby Terra Nova field is expected to start producing by Other energy projects recently launched or approved include the Sable Island natural gas field off the east coast of Nova Scotia and the Hibernia and Terra Nova oil fields off Newfoundland. New England currently relies on nuclear reactors for 45 percent of its electricity. Three of these have already shut down, and six more are expected. Mascara is running for reelection. R - NC 3rd were not included:

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