

Niigata Minamata Disease and Showa Denko

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Abstract

Niigata Minamata Disease is an organic mercury intoxication prevailed in the Agano River area in central part of Niigata Prefecture in 1950s and 1960s. Many patients have suffered from the disease until today, and some of them died of it in extreme agony. This disease was caused by methyl mercury from Kanose Factory of Showa Denko which produced acetaldehyde as its main product in terms of limestone based chemical technology. Discharged methyl mercury was stored and condensed in plankton, aquatic insects and fish of the river and was eaten by many people and made Niigata Minamata Disease patients. Some of them presented a case to Niigata District Court in 1967 and won the case in 1971.

Niigata Minamata Disease has scarcely been of research topics in social science areas in spite of many studies in chemical and medical areas. This article may be a challenge in this tendency. Two research steps are taken in this research: one step is physical accounting approach for historical examination of Niigata Minamata Disease and its patients and the other step is external environmental accounting approach about disclosure of compensation in annual reports.

Conclusions are:

- a) Patients had once spent normal lives but suffered from a disease of mercury intoxication. Their geographical distribution is so wide ranging from the mouth of the Agano River to the area of 60km upstream. There were no apologies to them and compensation was paid very late.
- b) Showa Denko has denied any involvement and responsibility on Niigata Minamata Disease. External statement of opinions was practiced by writing additional descriptions of “Case of Methyl Mercury Intoxication around the Agano River” in its annual reports. No cares were paid on minus product which comes with positive products in manufacturing processes but sales

increase in terms of new technological innovation was consistently kept.

- c) Compensation was ¥26,886 million in total which was disclosed in sections of non operational actions or outside management policies: Section of Decrease of Deferred Profit Surplus, Statement of Surplus, and Section of Extraordinary Loss, Statement of Income, in response to changes of *Financial Statements Regulation* (cf. Appendix 2).

Keywords:

acetaldehyde, Agano River, carp (*nigoi*), Anzai (Masao) Compensation for Niigata Minamata Disease, dace (*ugoi*), Deferred Profit, Kanose Factory, food-chain, methyl mercury, organic mercury intoxication, physical accounting approach, Statement of Surplus (notice: Italicized style expresses local fish names.)

Significance of Niigata Minamata Disease in Japanese Pollution History

In Japan, 1960s are the period of Kogai Saiban (pollution trials). For example, they were a court for Yokkaichi Asthma in Mie Prefecture, a court for Itai-itai Disease in Toyama Prefecture, a court for Minamata Disease in Kumamoto Prefecture and a court for Niigata Minamata Disease in Niigata Prefecture (cf. Exhibit 1). All of them are industrial disasters caused by wrong downstream processes of production systems. Victim patients won on account of the Principle of Polluter's Cost. This pollution case was the negative side of production without *Material Flow Cost Accounting* in its process management.

Itai-itai Disease and two Minamata Diseases were results of heavy metal intoxication. It is important that there has been Niigata Minamata Disease in Niigata Prefecture in addition to traditionally well-known Itai-itai Disease and Kumamoto Minamata Disease. Niigata Minamata Disease has scarcely been recognized among people in general although it is also an organic mercury intoxication caused by methyl mercury, by-product of acetaldehyde^(a). There have been many studies about Niigata Minamata Disease and they made clear that a) Kanose Factory of Showa Denko discharged methyl mercury, causal substance of the disease, b) methyl mercury was condensed in fish throughout food chains of biological systems of the Agano River and c) people living around the river ate fish and contracted Minamata Disease.

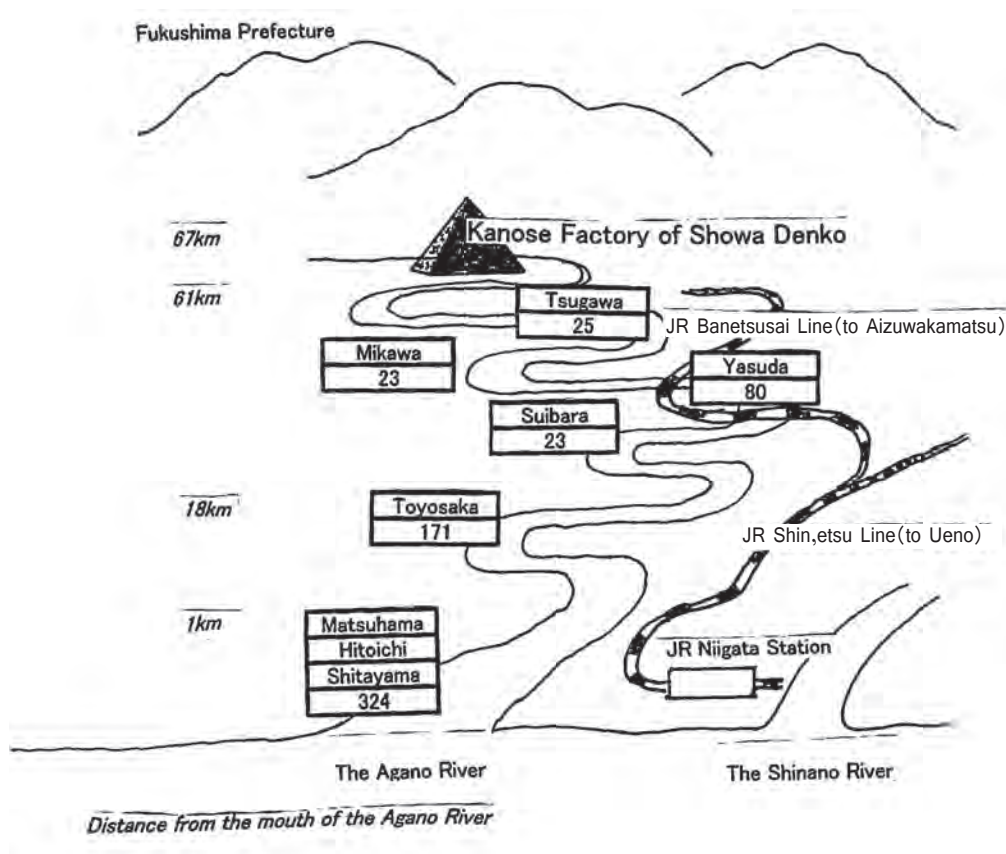
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Exhibit 1 Three Major Heavy Metal Kogai Diseases

Name (Prefecture)	Formally Found	First Trial	Decision	Formal Patients	Approved	Miscellaneous
Itai-itai Disease (Toyama)	Aug/ 04 /1955	Mar/ 09 /1968	Jun/ 30 /1971	178	388	Decision, Nagoya Court of Appeal, Aug/9/1972
Minamata D (Kumamoto)	May/ 01 /1956	Jun/ 14 /1969	Mar/ 20 /1973	1,778	1,895	Compromise 3rd Trial, May/22/1996
Niigata MD (Niigata)	Jun/ 12 /1965	Jun/ 12 /1967	Sep/ 29 /1971	690	834	Compromise 2nd Trial, Feb/27/1996

- Notice
- 1 Itai-itai Disease first newspaper publishing; Minamata (Kumamoto) first patient report to Minamata City Health Center; Niigata Minamata Disease Cooperative Announcement of Niigata University and Niigata Prefecture
 - 2 Formal Patients are as of 1974 for Itai-itai Disease; as of 2009 for Minamata Disease (Kumamoto); and as of 2007 for Niigata Minamata Disease (authorized patients)
 - 3 Approved (Patients) are people of official observation in Itai-itai Disease; Applicants for official recognition in Minamata Disease; and people under Comprehensive Medical Treatment Program in Niigata Minamata Disease

Exhibit 2 Major Disaster Areas and Patients of Niigata Minamata Disease



- Notice
- a) Authorized patients are 690, and comprehensive medical care patients are 834, as of 2007
 - b) Distances are real kilometers measured by the author's car meter

Reference Niigata Prefecture, Environmental Health Division, Department of Health and Social Welfare 1997 (*Niigata Minamata Byo no Aramashi*), 'Overview of Niigata Minamata Disease', p 13

Japanese companies and government changed themselves for counter pollution through lost cases, and new laws were established at pollution. However, pollution cases have changed their nature from real experience to virtual knowledge which tells that pollution is a part of the Japanese modern history. They have been succeeded through media and books, today. In such situations, victim patients have been less understood and relationship between cause substances and cause companies has not been examined in further detail in the perspectives of present environment. As the result, negative aspects of new technologies would be missed and new pollutions and new victim patients would be left again.

It may be necessary for us to make strict precautions against coming of a repeated history of new industrial tragedies.

In this article, we will examine how compensation and reserve were expressed in relation to Niigata Minamata Disease and management style of Showa Denko under research methodology of physical accounting approach ^(b).

Niigata Minamata Disease and Showa Denko

The terminology, “Niigata Minamata Disease,” is formally adopted by Niigata Prefecture^(c). Niigata Minamata Disease is a Minamata Disease occurred in Niigata Prefecture. Niigata Prefecture defines Minamata Disease is “a nervous disease with the nature of intoxication by eating fish contaminated by organic mercury repeatedly and continuously.”^(d) The name of this disease is called in various terms as, a) “nervous disease” for in fact first male patient of Minamata Disease who died in 1964, the 39th year of Showa, b) “organic mercury intoxication” for the patients who were diagnosed by Tadao Tsubaki, professor of Internal Neurology Department, Affiliated Hospital of Niigata University, who started his work at the hospital in 1965, the 40th year of Showa, c) “the Second Minamata Disease” which was a newspaper title to tell the decision of Niigata District Court on September 29, 1967, the 46th year of Showa (cf. Exhibit 2) . Showa Denko has consistently called “Organic Mercury Intoxication around the Agano River” except “Niigata Minamata Disease” in the annual report of 2011.

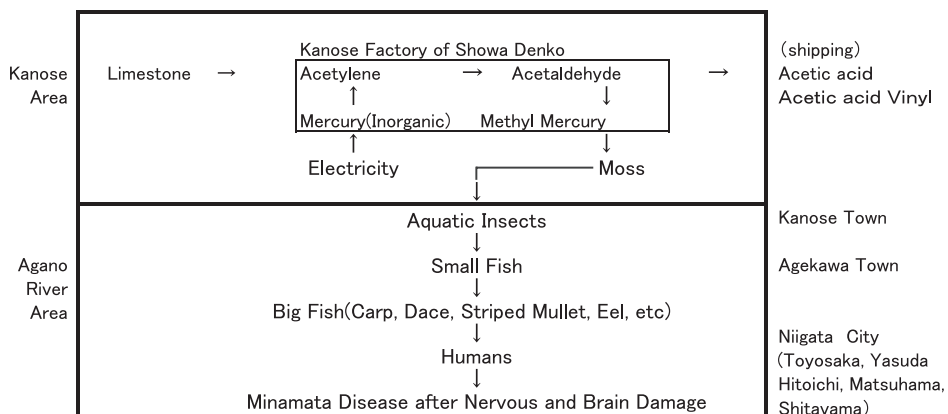
Niigata Minamata Disease is a nervous trouble caused by methyl mercury which flew from factory located at 67km upstream for 30 years since 1936, the 11th year of Showa (distance was really measured by the author). This brings total human nervous trouble and brain trouble and, sometimes, death. Methyl mercury was produced in large quantity as the by-product of acetaldehyde which

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had been produced since 1960, the 36th year of Showa, and people were caught by Minamata Disease because methyl mercury was condensed through food chain of carp, dace and eel in the middle and downstream areas of the Agano River. (cf. Exhibit 3) Niigata Minamata Disease is incurable disease which starts from feeling languid and narrow field of vision, tremulous hands and feet, and in the next stage, suffering from brain trouble and damage with tragedies of death in wild appearance and extreme gruesome violence. As it has been incurable, many patients have suffered from it even still today⁽⁶⁾. In 1966, the Minamata Disease Research Group of Medical School of Kumamoto University, chaired by Masachika Kutsuna, Dean of the Medical School, published *Minamata Disease* as the result of ten years' research which analyzed how methyl mercury was produced in the process and brought along the food chain in the circumstances and reached humans via fish eating.

The case of Niigata Minamata disease is special in several aspects that victim patients met doctors who were interested and had knowledge in intoxication of organic mercury, that they could meet lawyers living in Niigata City who could organize nationwide support systems, that officers of Niigata Prefecture were eager in finding cause of Niigata Minamata Disease and saving patients for their lives, and that victim patients kept their anger at the fact that sons and fathers were killed by Niigata Minamata Disease and presented a case to Niigata District Court. The first pollution lawsuit began under such background in Japan.⁽⁷⁾ (cf. Appendix 1)

Exhibit 3 Material Flow of Methyl Mercury in Niigata Minamata Disease



Notice Originated by the author, partly referring *Outline of Niigata Minamata Disease* published by Niigata Prefecture in 2005

Involvement of Showa Denko in the Case of Niigata Minamata Disease

Masao Anzai chaired as the president while Showa Denko produced huge quantity of acetaldehyde and patients of Niigata Minamata Disease presented a case to the court and the company lost the case. Anzai was a graduate of school of economics and law school, Tokyo University, taking eight years. In contrast, founders of the other new chemical companies were engineers. Such background suggests us predisposition of the company and himself which looked the production facilities as the source of profitability but braving both sides of modern technologies in positive and negative aspects^(g). Showa Denko challenged to develop new technologies and expanded business same with the other new Zaibatsu(financial combines). As its general impression is said to be “a typical chemical company and strong Imozuru shiki keiei (management style by sweet-potato vines),” its new management style was expanding profit resources by developing new product lines which were not within business territories of traditional financial combines on account of business risk of new technologies [*Kaisha Shiki Ho*, June 1936, the 11th year of Showa.]. In the case of Showa Denko, Nobuteru Mori, the founder of the company, at first built a company extracting iodine from sea tangle, and then built next company, Showa Denko, which produced and sold nitrogenous fertilizer made from limestone. He produced acetaldehyde from acetylene by extending the production process of the fertilizer and realized a company supplying wide range of products in the comprehensive inorganic chemistry [Showa Denko, p.120]. Furthermore he succeeded in technological challenge to produce the first Japanese aluminum in order to utilize electricity which were, then, abundant resources^(h).

Methyl mercury was produced as by-product of acetaldehyde, and it was discharged into the Agano River without any processing to exclude hazardous nature. It was absorbed by moss and waterweed, and they were eaten by aquatic insects and fish as their food. Methyl mercury was condensed biologically in food-chain in the Agano River. People living around the Agano River and humans, fish eaters, were the last food-chain and material flow of methyl mercury [Niigata Prefecture, p.15](cf.Exhibit 3).

As the Agano River had been abundant in fish or rich in fish, fishermen enjoyed large catches all around the year. The fish was for sale and eaten by themselves, too. They were the biggest protein resource, relish taken with sake drinking and source of good health. When Niigata Minamata Disease prevailed,

they lived in habit of Kafucho sei (father's absolute family dominancy) and table order of dinner was decided by father or grandfather as the first eater . This is the background where all dead patients in the first stage of Niigata Minamata Disease were males, e.g. in fact first death senior fisherman of Oyama settlement. The reason why river fish was taken for daily foods is that the Agano River was the fundamental base of all aspects of people's life which offered for kitchen, bath, traffic routes and places for fishery ⁽ⁱ⁾.

Niigata Prefecture published the fact of Niigata Minamata Disease as the occurrence of organic mercury intoxication around the Agano River on June 12, 1965, the 40th year of Showa. The announcement told seven patients (all males, two of them were dead). In addition, Niigata Prefecture published six dead patients (all males), 43 officially authorized patients, eight patients for medical observation and 47 birth control women as of January 1971, the 46th year of Showa. This quick response was evaluated to be effective ⁽ⁱ⁾.

Lawsuit was held under such background, shown as above. The plaintiffs, three families and 13 people, presented a case to the Niigata District Court on June 12, 1967, the 42nd of Showa. This is called the first instituting. They got decision of win at the First Civil Department, Niigata District Court, under Kei'ichi Miyazaki as presiding judge on September 29, 1971, the 46th year of Showa. But 94 plaintiffs were not officially recognized as patients of Niigata Minamata Disease at the first lawsuit, and they presented the second instituting at the Niigata District Court on June 21, 1982, the 57th year of Showa. All cases were done with compromise with Showa Denko in February 23 and 27, 1996, the eighth year of Heisei. They spent four years and three months for the first lawsuit and 13 years and eight months for the second lawsuit. In total, they spent 31 years and four months from finding of the first Niigata Minamata Disease patient to the final compromise.

Characteristics of Financial Statements of Showa Denko

Annual reports of Showa Denko were examined from the 39th Term (ending in June, 1961, the 39th year of Showa) when it began producing huge quantity of organic mercury (methyl mercury) as a result of big acetaldehyde production to the 88th Term (ending in December, 1996, the eighth year of Heisei) when three years had passed since the final compromise with patients at the second lawsuit. Its financial statements were analyzed on compensation disclosure in balance

sheets and statements of income for 51 terms or for 37 years.

It is noticeable that systems of financial statements were sometimes changed following corrected versions of *Financial Statements Regulation* (cf. Appendix 2). The biggest change is on their term length for the settlement of accounts: six months settlement were normal until the 66th Term (ending in December, 1974, the 49th year of Showa), but one year term has been given since the 67th Term (ending in December, 1975, the 50th year of Showa). Joyokin Shobun Keisan Sho (Surplus Disposal Statement) or Kessonkin Shori Keisan Sho (Loss Process Statement) was abolished and disclosures in those statements were to be noted in the Section of Extraordinary Profit or the Section of Extraordinary Loss which were added in new statement of income. Accordingly compensations in relation to Minamata Disease were described in the Section of Extraordinary Loss since the 67th Term.

Otherwise, new regulation introduced new form on statement of income, defining Keijo Rieki (Ordinary Income) or Keijo Sonshitu (Ordinary Loss) adding Operating Profit and Eigyo Gai Shueki (Non-operating Income) deducted from Non-operating Cost and abolishing traditionally used Toki So Rieki, or Toki So Sonshitsu (Gross Profit (or Gross Loss)) adding Operating Income and Non-operating Income and also abolishing Toki Jun Rieki (Net Profit) deducting Non-operating Cost from Gross Profit. Toki Mishobun Rieki (Net Income) or Toki Mishori Kessonkin (Net Loss) was newly defined as the base of calculating dividends and Profit Reserve, on the other hand Toki Mishobun Rieki Joyokin (Net Profit Reserve) in Joyokin Shobun Keisansho (Surplus Appropriation Statement) was abolished.

Phase One

This phase covers the 39th-the 59th Terms: 1961-1970, the 36th year to the 45th year of Showa.

Sales increased 374% for those ten years from ¥43,670 million (total of the first and second terms of 1961, the 36th year of Showa) to ¥163,317 million (total of the first and second term of 1970, the 45th year of Showa). A special opinion was described in Part 3 “Miscellaneous” of its 51st Annual Report (ending in June, 1967, the 42nd year of Showa) persisting that its discharged wastewater had no relations with the Case of Intoxication around the mouth of the Agano River^(k), as Showa Denko was sued on Niigata Minamata Disease by the people living around the Agano River in 1967, the 42nd year of Showa. Masao Anzai had taken his office as the president, but he persisted ignorance of himself at the court that

Kanose Factory discharged methyl mercury⁽¹⁾. Any account and information was not disclosed in the Annual Report following the company's formal comment as it was not concerned with Niigata Minamata Disease.

Phase Two

This phase covers the 60th- the 66th Terms:1971-1974, the 46th year to the 49th year of Showa.

This phase is special in the lost case at the Niigata District Court and the six months settlement of accounts finishes. Anzai retired from his position of president at the board of directors after the 59th general stockholders meeting held in September 1971, the 46th year of Showa, and Haruo Suzuki replaced as the new president.

In the Annual Report of the 60th Term (ending December 1971, the 46th year of Showa) formal announcement about lost case at the Niigata District Court was described under the title of "Comment on the Case of Claim for Damages in the Case of Mercury Intoxication around the Agano River" explaining that the company lost at the case and the lawsuit was terminated with voluntary waiving the right of appeal^(m).

Compensation for the damages of plaintiffs on account of the lost case was disclosed as follows:

1. the 60th Term "8.Compensation for the Case of Organic Mercury Intoxication of the Agano River" ¥278million. This is described in the Fourth Section, Kurikoshi Rieki Joyokin Gensho Daka (Decrease of Deferred Profit Reserve) in Joyo kin Keisan Sho (Surplus Statement) (same statements, below) .
2. the 61st Term no description
3. the 62nd Term no description
4. the 63rd Term "Compensation for Organic Mercury Intoxication" ¥3,635 million. In this term "Toki Mishobun Rieki" (Appropriated Profit) is minus and no dividends on account of "Toki Jun Sonshitu" (Net Loss), not "Toki Jun Rieki" (Net Profit). This Compensation (3.5% sales ratio) was not main reason of no dividends.
5. the 64th Term "Compensation for Organic Mercury" ¥588 million (Total payment of both the 63rd and 64th

Terms, in the year 1973, the 48th year of Showa, is ¥4,223 million)

5. the 65th Term “Compensation for Organic Mercury” ¥961 million

6. the 66th Term “Compensation for Organic Mercury” ¥819 million (Total payment of both the 65th and the 66th Terms, in the year 1974, the 49th year of Showa, is ¥1,780million) . The 66th Term is the last term of six months settlement of accounts.

Phase Three

This phase covers the 67th- the 81st Terms:1975-1989, the 50th year of Showa to the first year of Heisei. This phase is special in new *Financial Statements Regulation* and the last terms treating a single compensation for Niigata Minamata Disease.

Disclosure style is almost same for the second phase of Compensation in relation to Niigata Minamata Disease, but it was described as “4. Compensation for Organic Mercury Intoxication” in the Section of “VII Extraordinary Loss” of statement of income following the code of new *Financial Statements Regulation*, while it used to be an item in Surplus Statement. The total sum of the compensation is ¥15,510 million for those 15 terms or 15 years, amounting 0.2% to 0.3% sales ratio in an average. Tadao Tsubaki chaired the judgment committee for official recognition of Niigata Minamata Disease patients and he worried high amount of payment in the viewpoint of management, but those small sales ratios denied his anxiety.

“3. Kogai Boshi Junbikin Torikuzushi Daka (Taken Down of Pollution Prevention Reserve)” for “VIII Tokutei Hikiatekin” (Specified Allowances) in the same statement of income are described as follows:

70th Term ¥380 million

71st Term ¥120 million

72nd Term ¥113 million

73rd Term ¥138 million

74th Term ¥165 million

“2. Transferred Amounts to Kogai Boshi Junbikin Kuriire Gaku (Pollution Prevention Reserve)” for “X Tokutei Hikiatekin Kuriire Gaku (Transferred Amounts to Specified Allowances)” in the next part are described as follows:

70th Term ¥48 million

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71 st Term	¥113 million
72 nd Term	¥185 million
73 rd Term	-----

“2. Pollution Prevention Reserve” was set in “II Specified Allowances” in Husai no Bu (Debt Section) of balance sheet to prepare pollution is described as follows:

70 th Term	¥80 million
71 st Term	¥418 million
72 nd Term	¥488 million
73 rd Term	¥350 million (Changed to “Shihon no Bu (Part of Capital)”)
74 th Term	¥185 million (Same as above)
75 th Term	¥185 million
76 th Term	and after no descriptions

Pollution Prevention Reserve was changed as “(4) Pollution Prevention Reserve ” in “1.Nin'i Tsumitatekin (Revenue Reserve)” in “IV Sonotano Junbikin (Miscellaneous Reserve)”⁽ⁿ⁾.

Phase Four

This phase covers the 82nd- the 88th Terms:1990-2006, the second year to the eighth year of Heisei. This phase is special in double payment of compensation, L-Tryptophan and Niigata Minamata Disease.

In this phase costs related with Niigata Minamata Disease were described as “4. Compensation for Organic Mercury Intoxication” in the Section of “VII Extraordinary Loss” of Statement of Income. Total compensation of Niigata Minamata Disease is ¥5,095 million for seven terms or seven years. Its sales ratio was 0.1-0.2%.

In this phase L-Tryptophan case occurs. The total of “L-Tryptophan related Loss” was 208,519 million, with sales ratio is 6.1% (208,519 ÷3,433,542). Special decisions are supposed to be given by the top management⁽ⁿ⁾. This case was essentially avoidable if top managements were delicately anxious of both main products and by-products in production processes considering historical examination of Niigata Minamata Disease.

Showa Denko has been involved in Niigata Minamata Disease in its financial statements, too. The Balance Sheet of the 102th Term , ending December 31, 2010, the 22nd year of Heisei, shows “Niigata Minamata Byo Kanren Hikiatekin (Allowance for Relation of Niigata Minamata Disease)” ¥976 million in Liquid Debt Section of the Balance Sheet, and “Niigata Minamata Byo Hikiatekin Kuriire Gaku (Transfer to Allowance of Niigata Minamata Disease)” ¥978 million

in Extraordinary Loss Section of statement of income. (This allowance follows the Special Measures Law for the Relief and Solution of Niigata Minamata Disease, the Law No.81, enforced on July 15, 2009, the 21st year of Heisei, finally corrected on May 25, 2010, the 22nd year of Heisei.)

Niigata Minamata Disease in Financial Statements

Causal company paid patients of Niigata Minamata Disease ¥26,886 million in total for 26 years under an account name of “Compensation for Organic Mercury Intoxication.” On the hand, it paid ¥208,519 million in total under an account name of “L-Tryptophan Related Loss.” Its sales ratio was maximum 3.5% in the 35th term, but 0.1-0.3% in the other terms. Its sales ratio in L-Tryptophan related loss was 6.1% in total. It may be reasonable that it distinguishes the prices of human lives between the United States and Japan [Saito,p.161]. As it always persisted that it is not involved in Niigata Minamata Disease, it may be reasonable that it is described by “Compensation.” Its CSR development is looked forward to going one step further in consideration of real experience of pollution lawsuit and its historical contribution is expected for the victims and a given decision.

Epilogue: Significance of Niigata Minamata Disease at Present

In 2010 I had an opportunity to find Niigata Minamata Disease. I read *Outline of Niigata Minamata Disease*, a pdf file in the homepage of Niigata Prefecture, for an examination check of a chart of foodchain and methyl mercury in Minamata Disease. My first impression was simply a mechanism of Minamata Diseases in Kumamoto Prefecture, but the homepage showed me Niigata Prefecture. This is my first material of Niigata Minamata Disease. It was natural for me that Minamata Disease did not prevail only in Kumamoto Prefecture but Niigata Prefecture, because organic mercury intoxications were easily supposed to occur in many places where acetaldehyde was produced by using limestone as its raw material and mercury (inorganic) as its catalyst.

Pollution damages or pollution diseases are to occur only in case of existence of a local specialist eagerly working for local patient people. Case of Itai-itai byo (Itai-itai Disease) owes to Noboru Hagino, a local doctor in Toyama Prefecture. The cases of Minamata Diseases owe to professors of Medical School of Kumamoto

University and Hajime Hosokawa, Chair of Affiliated Hospital of Shin Nihon Chisso (New Japan Nitrogen). These medical personnels devoted themselves to their patients and, with help of lawyers, victim patients won at the courts. But in the other areas where medical personnels did not work for the patients, there were no published pollution cases as social problems and they died with their agony enclosed in themselves and they were buried in darkness of history. In Niigata Prefecture there worked effective activities among local doctors, professors of Niigata University, lawyers with nationwide social abilities, local supporting people and staffs of prefectural administration. Many victim patients could win at the court and were saved by social recognition and medical care.

The keyword, “Niigata Minamata Disease” suggested me another keyword in an accounting field, “Showa Denko.” Accordingly my research was obliged to be in double structure, as:

- a) geologically understanding the Agano River, medically understanding mechanism and damages of Niigata Minamata Disease, sociologically understanding people’s life style around the Agano River, and checking books and prefectural materials about Niigata Minamata Disease and Showa Denko.
- b) analyzing annual reports of Showa Denko to get information about compensation and reserve.

It was a great impression that the Agano River is far bigger and more beautiful than my expectation. I appreciated the scenery of valley in upstream area of prefectural border between Fukushima Prefecture and Niigata Prefecture where Kanose Factory was located. And I understand how the origin of “The Rhine Boat Sightseeing,” a nationwide popular sightseeing vocabulary in Japan, was born here.

It is my surprise to know that the court of Niigata Minamata Disease was the first court of pollution in Japan. It helped my understanding of Kumamoto Minamata Disease more. Lawyers and victim patients went to Kumamoto to unite with the patients of Minamata City and encouraged them. As a result, patients of Minamata City presented a case.

Niigata Minamata Disease occurred on account of factory operation without environmental consideration of Anzai. It made people disable, unemployed and poorer. The disease made them worse day by day and month by month. And that they suffered from superstitious distinction in local community. Damages and troubles of years were too much serious, because they lived long years from

finding of the disease of 1964, the 39th year of Showa, to the final compromise in 1996, the eighth year of Heisei.

I get a conclusion from analysis of annual reports that descriptions about Niigata Minamata Disease are simple except opinion comment. “Organic Mercury Intoxication” is always used except “Compensation for the Case of Organic Mercury around the Agano River,” shown in the 60th Term (ending September, 1971, the 46th year of Showa). It is sure that Showa Denko had an attitude to deny the relationship with material flow of methyl mercury in the Agano River, because it never wrote “Minamata” in their public documents, and the sections of disclosure were always in “Section of Extraordinary Loss” which meant that matters written here were without company operation or uncontrollable disasters like natural damages. These facts show that Showa Denko’s policy of judgment that Niigata Minamata Disease is simply an intoxication.

All of those annual reports got audit reports which tell as true and fair view of financial position. As they were prepared along “generally accepted” accounting principles, disclosed information and its style are to be true and fair, but disclosing style will be the next discussion topics, because there have been many incurable and dead patients.

Niigata Minamata Byo ni Kakawaru Kondankai (Meeting Concerned with Niigata Minamata Disease Case) suggests a question about pollution cases related with heavy metal and hazardous substances as comprehensive conclusion of Niigata Minamata Disease [Niigata Minamata Disease Case, Meeting Concerned With, p.42]. This means a critical message at a Johshu (castle lord) in a situation of Kigyo joka machi (company castle town) under Asian feudal systems⁽⁶⁾ where their relation is between town people and castle lord. Such historical observation may lead us to a proposal to reconsider pollution problems which may be, in turn, a problem indication of one type of a social structure existing even today [National Institute for Minamata Disease, p.138].

Appendix 1. History of Niigata Minamata Disease

		Abbreviated																											
Year		1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1996			
Japan Yr		36	37	38	39	40	41	42	43	44	45	46	47	57	58	59	60	61	62	63	71	82	83	84	85	88			
Period		40	42	44	46	48	50	52	54	56	58	60	62	74	75	76	77	78	79	80	81	82	83	84	85	88			
Organic Mercury Intoxication Related Matter	Huge Production of Acetaldehyde																												
Patients Related Matter																													
Other																													

Notices 1 Source is *Overview of Niigata Minamata Disease* (Niigata Prefecture, 2007) pp 44-51.

2 Japan years are of Showa. Italic shows Heisei

3 Period means accounting periods of six months accounting term, but terms after '74 are of one year accounting term

4 Years of 1961, 1964, 1967 and 1971 are of painted background to show important cases

5 "Factual" means the patient recognized as Minamata Disease after death "Authorized" means patients recognized as Minamata Disease in the Hospital of Niigata University

Appendix 2 History of Financial Statements Rules

Established	Rules by Security Exchange Committee ^{a1} . No.18. Sept/28/1950(s50) Finally corrected Nov/14/1953(S38)	No 59 Order of MOF ^{a1} , Nov/27/1963(s38) Finally Corrected No.4 Order of MOF, Jan/30/1963(s38)	No 59 Order of MOF, Nov/27/1963(s38) Finally Corrected No.54 Order of MOF, Sep/28/1974(s49)	No 59 Order of MOF, Nov/27/1963(s38) Finally Corrected No.30 Order of Cabinet ^{a1} , Jun/30/2011(n23)
Contents	Chap One ^{a2} General Principles Chap Two Balance Sheet Chap Three Statement of Income Chap Four Surplus (Loss) Statement ^{a3} Chap Five Surplus Appropriation Statement or Loss Appropriation Statement ^{a4} Chap Six Affiliated Detail Statements ^{a5}	Chap 1 General Principles Chap 2 Balance Sheet Chap 3 Statement of Income Chap 4 Surplus Statement Chap 5 Surplus Appropriation Statement or Deficit Appropriation Statement Chap 6 Affiliated Detail Statements	Chap 1 General Principles Chap 2 Balance Sheet Chap 3 Statement of Income Chap 4 Surplus Statement Chap 5 Affiliated Detail Statements	Chap 1 General Principles Chap 2 Balance Sheet Chap 3 Statement of Income Chap 4 Profit Statement Chap 5 Affiliated Detail Statements
Form	<i>Handling Essentials of Financial Statements</i> ^{a6} Form No.Two P/L pp.182-183 I. Sales II. Cost of Sales III. Selling, General and Administrative Costs IV. Non-operating Income ^{a7} V. Non-operating expense ^{a8} (Net Income ^{a9} or Net Loss ^{a10}))	<i>Handling Essentials of Financial Statements</i> Form No.2 Statement of Income p.528 I. Sales II. Cost of Sales III. Selling, General and Administrative Costs IV. Non-operating Income (Gross Profit ^{b2} or Gross Loss ^{b3}) V. Non-operating expense (Net Income (or Net Loss))	<i>Handling Essentials of Financial Statements</i> Form No.2 Statement of Income p.496 I. Sales II. Cost of Sales III. Selling, General and Administrative Costs IV. Non-operating Income V. Non-operating expense VI. Extraordinary Profit ^{a1} VII. Extraordinary Loss ^{a2} Net Income Deferred Income of the Previous Term ^{a4} (or Deferred Loss of the Previous Term ^{a5}) Transferred Amount from Intermediate Dividend Reserve ^{a6} Intermediate Dividend ^{a7} Transfer to Income Reserve accompanied by Intermediate Dividend ^{a8} Unappropriated Income ^{a9} (or Unappropriated Loss ^{a10})	<i>Handling Essentials of Financial Statements</i> Form No.Six Statement of Income p.1144 Sales Cost of Sales Selling, General and Administrative Costs Operating Income (or Operating Loss) Non-operating Income Non-operating expense Ordinary Income ^{a2} Extraordinary Profit Extraordinary Loss Income before Tax ^{a3} (or Net Loss ^{a4}) Corporate Tax, Resident Tax and Business Tax ^{a5} Corrections of Corporate Tax and Others ^{a6} Sum of Corporate Tax and Others ^{a7} Net Income
Form of Surplus Statement	<i>Handling Essentials, Form No.Three</i> ^{a11} Surplus Statement, p.184 Section of Profit Surplus ^{a12} I. Profit Reserve ^{a13} II. Revenue Reserve ^{a14} (Reserve for Pension Fund ^{a15} , Reserve for Sinking-fund Reserve ^{a16} , ---) III. Unappropriated Profit Surplus ^{a17} (In Case of Unappropriated Profit Surplus of	<i>Handling Essentials, Form 3</i> Surplus Statement, p.528 (In Case of Unappropriated Profit Surplus of the Previous Term) I. Unappropriated Profit Surplus of the Previous Term ^{b4} II. Appropriated Amount of Profit Surplus of the Previous Term ^{b5} (Deferred Profit Surplus ^{b6})		

	of the Previous Term ^{a18} (1) Appropriated Amount of Unappropriated Profit Surplus of the Previous Term ^{a19} (2) Appropriated Amount of Profit Surplus of the Previous Term ^{a20} 1. Profit Reserve^{a21}, 2. Tax, 3. Dividend, 4 Executive's Bonus ^{a22}, 5. Revenue Reserve, 6. Other Revenue Reserve (Reserve for Pension Fund, Sinking-fund Reserve) Deferred Profit Surplus ^{a23} III : Deficit^{a24} (In Case of Unappropriated Deficit^{a25} of the Previous Term) (1) Unappropriated Deficit of the Previous Term ^{a26} (2) Appropriated Amount of the Previous Term ^{a27} (3) Increase of Deferred Profit Surplus ^{a28} (or Decrease of Deferred Profit Surplus ^{a29}) (4) Decrease of Deferred Profit Surplus (or Increase of Deferred Deficit) Term end Balance of Deferred Profit Surplus ^{a30} (or Term end Balance of Deferred Deficit ^{a31}) (5) Net Income ^{a32} Unappropriated Profit Surplus ^{a33} (or Unappropriated Deficit ^{a34}) Section of Capital Surplus ^{a35} abbreviated	(In case of Unappropriated Deficit of the Previous Term) I : Unappropriated Deficit of the Previous Term^{b7} II : Appropriated Amount of Deficit of the Previous Term ^{b8} (Deferred Deficit ^{b9}) III : Increase of Deferred Profit Surplus ^{b10} (or Decrease of Deferred Deficit ^{b11}) IV : Decrease of Deferred Profit Surplus ^{b12} (or Increase of Deferred Deficit ^{b13}) Term end Balance of Deferred Profit Surplus ^{b14} (or Term end Balance of Deferred Deficit ^{b15}) V : Net Income Unappropriated Profit Surplus (or Unappropriated Deficit including Increase(or Decrease) of Unappropriated Profit Surplus ^{b16})			
Term	40	42-66	67—	Present(Reference)	
Notice 1	ground shows disclosed section of Compensation for Niigata Minamata Disease.				
2	"s" marked years mean Showa. "h" marked years mean Heisei.				
3	"Term" matches with Appendix 1.				
4	Financial Statements Regulation is abbreviated expression of Ordinance on Terminology, Forms and Preparation Methods of Financial statements.				
Reference	Kaikai Zensho, s36 edition Chuokeizaisha, 1961(s36)	Kaikai Zensho, s38 edition Chuokeizaisha, 1963(s38)	Kaikai Zensho, s50 edition Chuokeizaisha, 1975(s50)	Kaikai Zensho, September, h23 edition Chuokeizaisha, 2011(h23)	

Kazumasa TAKEMORI

notices(a)

1. Shoken Torihiki linkai
2. Chap means Chapter. One, Two express original description by numbers by Chinese Characters
3. Joyokin (Sonshutukin) Keisansho
4. Joyokin Shobun (Sonshutukin Shori) Keisansho
5. Fuzoku Meisa hyo
6. Zaimu Shohyo Toriatsukai Yoryo
7. Eigyo Gai Shueki
8. Eigyo Gai Hyo
9. Toki Jun Rieki
10. Toki Jun Sonshitu
11. Toriatsukai Yoryo, Yosh ki Dai San Go
12. Rieki Joyokin no Bu
13. Rieki Joyokin
14. Nin'i Tsumitatekin
15. Taishoku Kyuyo Hikiatekin
16. Gensai Hikiatekin
17. Mishobun Rieki Joyokin
18. Zenki Mishobun Rieki Joyokin
19. Zenki Mishobun Rieki Joyokin Shobun Gaku
20. Zenki Rieki Joyokin Shobun Gaku
21. Rieki Junbikin
22. Yakuin Shoyokin
23. Kurikoshi Rieki Joyoyokin
24. Kessonkin
25. Zenki Mishori Kessonkin
26. Zenki Mishori Kessonkin
27. Zenki Kessonkin Shori Gaku
28. Kurikoshi Rieki Joyokin Zoka Daka
29. Kurikoshi Rieki Joyo Kin Gensho Daka
30. Kurikoshi Rieki Joyokin Kimatsu Zandaka.
31. Kimatsu Kur koshi Kesson Kin Zandaka
32. Toki Jun Rieki
33. Toki Mishobun Rieki Joyokin
34. Toki Mishori Kessonkin
35. Shihon Joyokin no Bu

notices(b)

1. Ohkura Shorei
2. Toki So Rieki
3. Toki So Sonshitsu
4. Zenki Mishobun Rieki Joyokin
5. Zenki Rieki Joyokin Shobun Gaku
6. Kur koshi Rieki Joyoki
7. Zenki Mishori Kesson Kin
8. Zenki Kesson Kin Shori Gaku
9. Kur koshi Kesson Kin
10. Kur koshi Rieki Joyokin Zoka Daka
11. Kurikoshi Kessonkin Gensho Daka
12. Kur koshi Rieki Joyokin Gensho Daka
13. Kur koshi Kessonkin Zoka Daka
14. Kur koshi Rieki Joyokin Kimatsu Zandaka
15. Kur koshi Kessonkin Kimatsu Zandaka
16. Toki Mishobun Rieki Joyokin Zoka Daka (or Gensho Daka)

notices(c)

1. Tokubetsu Rieki
2. Tokubetsu Sonshitsu
3. Toki Jun Rieki
4. Zenki Kurikoshi Rieki Kin
5. Zenki Kurikoshi Sonshitsu Kin
6. Chukan Haito Tsumitate Kin Torikuzushi Gaku
7. Chukan Haito Gaku
8. Chukan Haito ni tomonau Rieki Junbikin Tsumitate Gaku
9. Toki Mishobun Riekin
10. Toki Mishori Sonshitsukin

notices(d)

1. Naikaku Hu Rei
2. Keijo Rieki
3. Zeibiki Mae Toki Jun Rieki
4. Toki Jun Sonshitsu
5. Hojin Zei Jumin Zei oyobi Jigyo Zei
6. Hojin Zei toh Chosei Gaku
7. Hojin Zei toh Gokei

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Chubu University, Miura Memorial Library of

Kanagawa Prefecture, Prefectural Library of

Kanagawa Prefecture, Kawasaki, Prefectural Library of

Nanzan University, Nagoya Library of

Ministry of Environment, Library of

Niigata Prefecture, Environmental Health Division, Department of Health and Social Welfare

Niigata Prefecture, Prefectural Library of

Tokyo Metropolitan Library

Tokyo Metropolitan Library, Tama Library of

Notices

- (a) *Merriam-Webster's Collegiate Dictionary* describes “by-product” as a formal American language (*Merriam-Webster's Collegiate Dictionary*, eleventh edition, Springfield, MA: *Merriam-Webster*, 2003, p.170.). In accounting publications, this terminology is written in several ways. Edward J. Blocher et.al. describe as “by-product” (Blocher, E. J. et.al. 2002. *Cost Management: A Strategic Emphasis*, second edition, New York, NY: McGraw-Hill/Irwin, p.663.), Charles T. Horngren et.al. describe as “byproduct” (Horngren, C.T. et al. 2006. *Cost Accounting: A Managerial Emphasis*, twelfth edition, Upper Saddle River, NJ: Pearson Education Inc., p.545.), Robert S. Kaplan describes as “by-product” (Kaplan, R.S. 1982. *Advanced Management Accounting*, Englewood Cliffs, NJ: Prentice-Hall, p.389.), and Osamu Nishizawa describes as “by-product” (Nishizawa, O. 2007. *Genka Kanrikaikei Ron (Cost and Management Accounting)*, Tokyo Japan: Chuokeizaisha, p.87. [Japanese printed] (alphabetical order of authors).
- (b) This article is written in the field of accounting. This is based on accounting research methodology and accounting materials. *Physical Accounting Approach* is based on the other side of this research. Every management accounting practice and research express their cost and management accounting cases both in physical and monetary terms, as “Intoxication of organic mercury made many patients and some of them died of it. The causal company paid ¥6,281 million to them as compensation.” All accounting data are results of monetary expression of corporate activities where management decisions are to be analyzed in physical terms in addition to monetary terms. In this article the cases of victim patients and pollution are analyzed because of research topics of production processes of causal substance and its material flow from production facilities to human bodies. Disclosure of compensation payment in financial statements is a part of environmental management accounting in which physically analyzed management decisions work historical contribution to the civilization to be developed by the people of future next generation. *Physical Accounting Approach* is defined as:

Environmental management accounting is an area of management accounting where individual environmental cases are to be measured, analyzed and discussed in terms of monetary and physically units. It is based on monetary information in addition to multiple measurements including physical units in order to propose problem solving of environmental problems and to promote environmental protection by means of geographical research, materials finding and picture collection [Takemori, p.47].

- (c) Hirohiko Izumida, Governor of Niigata Prefecture comments a message in Declaration of Environmental Construction of Home Country and in Inauguration of 40th Anniversary of Niigata Minamata Disease on June 6, 2005, as, “It has passed forty years since June 12, 1965, when Niigata Prefectural Government officially recognized Niigata Minamata Disease. It was a case of ten years after official recognition and publication of Minamata Disease by Kumamoto Prefecture in 1965, the 40th year of Showa.” [Niigata Prefecture, Environmental Health Division, Department of Health and Social Welfare. 2007. p.35].
- (d) Symptoms of Minamata Disease are characteristic in neural symptoms as:
1. sensibility trouble of hands and feet (the nearer to the tips of hands and feet, the less sensible or the more paralyzed)
 2. cerebellar failure of muscular coordination (incapable of movement in an order)
 3. dysarthria (incapable of normal conversation)
 4. centripetalism field of vision stricture (incapable eyesight around marginal angles like seeing through a pipe)
 5. central hearing trouble
 6. central eyeball motor disturbance
 7. central equilibrium trouble
 8. tremor (quaking)

All of these symptoms cannot be judged to have relations with methyl mercury in the early stage of patients. [Niigata Prefecture, Environmental Health Division, Department of Health and Social Welfare. 2007. p.17]

It is special that Niigata Minamata Disease prevailed even in mountain areas where any fisherman did not live. It is because of bicycle trading of fishermen’s wives who sold contaminated fish bringing on their bicycle baggage carrier (four boxes on it with each 10kg fish). They got cash revenue with such trading.

- (e) Niigata Minamata Disease patients are 1,524 as of December 2000 [Niigata Prefecture, Environmental Health Division, Department of Health and Social Welfare. 2007. p.13].
- (f) Time series of pollution lawsuits are: institute to Niigata District Court is June 12, 1967, the 42nd year of Showa, institute of Kumamoto Minamata Disease to the Kumamoto District Court is September 1969, the 44th year of Showa, and institute of Itai-itai Disease is March 1968, the 43rd year of Showa. This series order is not same with our common sense, but the fact is institute of people around the Agano River was the first.

In addition, “Two Testimonies” of NHK television program (broadcast on February 19, 1967, the 42nd year of Showa) is told to motivate the fishermen to lawsuit [Igarashi.

1971. p.96].

- (g) Before Niigata Minamata Disease was officially recognized, Light Industries Bureau of Ministry of Trade and Industry sent a letter of warning about organic mercury to eight concerned companies on November 10, 1959, the 34th year of Showa. Seven of them introduced facilities to treat organic mercury, but Showa Denko did not. This suggests that Anzai is weak in technology in detail, or he honestly succeeded management style of Nobuteru Mori, founder of Showa Denko and his father-in-law. As a result it is possible that he ignored everything except production and profit.

Chisso was one of seven companies which introduced mercury prevention facilities but it introduced a fake machine. It shows a fact of historic coincidence that two companies did not introduce true facilities and both of them prevailed Minamata Disease and made dead patients.

The decision of Niigata District Court described that the plaintiffs knew the company's wastewater discharging until November 1959, the 34th year of Showa, but that it continued its discharging [Niigata District Court, June 29, 1971, the 46th year of Showa, "Fact," "I .plaintiffs," "2. Illegal Acts(3)". The decision recognized "dolus eventualis" (willful negligence) of Anzai and Showa Denko. It is based on the document of 1959 described above.

Shinkichi Tsuda of Kanbebo, Tomoari Nakano of Nippon Soda, Shitagau Noguchi of Chisso and Gisuke Ayukawa of Nissan, founders of the other new financial combines, were engineers.

- (h) Nobuteru Mori increased sales by developing new production technology of acid and other chemical products which comes from intermediate material of acetylene and acetaldehyde processed from limestone, coal and electricity. Mori used Fauser Process for acetylene production and Chisso used Casale Process, and both of them were same in using limestone as raw material and mercury as catalyst. Mercury (inorganic mercury) is put into reactors as catalyst for hydrolytic decomposition. Acetaldehyde made from this process is of light weight gravity and stored in upper part of reactor tower and taken off as product. The others are stored as methyl mercury and drain in the basement of tower, and are discharged. (As they were not considered as hazardous material, Showa Denko discharged them into the Agano River and Chisso discharged them into the Shiranui Sea). This process was essential to produce acetaldehyde, but its by-product was not taken care at all. It must be noted that alminum factory located in Kitakata City, Fukushima Prefecture, used mercury in early days of its operation. Mercury as catalyst is to produce poisonous by-product, but Mori did not consider anything but production in his management philosophy. However there has not been

any blame about mercury influence and forest destruction around Kitakata City.

- (i) The Agano River has been a place of living for the people around the river which has been kept for hundreds years. Methyl mercury had been flown in secret from upstream of Kanose Factory which was built in 1929, the fourth year of Showa. It suddenly increased production of acetaldehyde in 1960, the 35th year of Showa, and people living around the river were attacked by unknown disease without any preparation.

The people had faced with lawsuit in spite of paralysis of hands and feet and other symptoms of Minamata Disease which worsened day by day and month by month. They confronted with double or triple troubles in addition to prejudice and distinction in their community. They suffered from physical handicap and were left in unemployment and poverty. Time length of 31 years may pose us many problems on corporate social responsibility.

- (j) Warning not to eat fish caught in the Agano River was effective because of a prefectural publication in spite of unknown reason and disease mechanism. But it may not be quick or proper because it was May 1956, the 31st year of Showa, when Minamata Disease on account of organic mercury intoxication was officially found, it was July 1959, the 34th year of Showa when Medical School of Kumamoto University officially recognized Minamata Disease comes from organic mercury, it is August 1962, the 37th year of Showa when Professor Katsuro Irukayama published extraction of methyl mercury in short necked clam of Minamata Bay (*Japan Journal of Hygienics*, August 1963) [Saito, p.212], and it was February 1963, the 38th year of Showa when Professor Irukayama found methyl mercury in waste which was taken directly from discharge pipe of Minamata Factory [Harada, p.69].

Niigata Prefecture responded following the report of Professor Tadao Tsubaki of Niigata University in June 1965, the 40th year of Showa, two years after the most recent publication of relation of Minamata Disease and methyl mercury. The response of the prefecture was proper but not timely because there had already been several medical reports about this strange disease and methyl mercury. It is same as for the national government. It is necessary to analyze why information publication was delayed by the Ministry of Welfare. Niigata Minamata Disease was able to be protected by quick response and information disclosure by nationwide hokenjo (public health center) network where factories producing acetaldehyde were under control.

- (k) Opinions about lawsuit on account of Niigata Minamata Disease were described in the annual reports of Showa Denko as follows (Annual Report of Showa Denko, No.51st, the June 1967 Term, the 42nd of Showa, p.50 and No.52nd, the December 1967 Term, the 42nd of Showa, p.50). The contents consist of three parts as, 1. Financial Statements, 2.

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Contents of main Assets and Debts and Revenue and Expense, and 3. Miscellaneous. The opinion about lawsuit case is described in part 3 as:

Several patient people (Sakutaro Ohno and 12) presented a case against the company in terms of case of intoxication prevailed around the mouth of the Agano River. It is under judge case in the Niigata District Court, now. They persist that long term discharge of wastewater by Kanose Factory (Kanose Denko Factory Inc., at present) of the company contaminated the river and made the disease. However, from the point of view that 27 patients temporarily occurred only around the mouth of the river, 60km downstream from the factory, soon after Niigata Earthquake of June 16, 1968, the 39th year of Showa, it should be right logic that thick contamination happened in the area in short term and the disease was made.

The other opinions after the 53rd period are noted in the author's virtual note in Japanese. (cf. http://akiba.geocities.jp/takemorisense/mbyo_n_laws.html)

- (1) Tsutomu Minakami, an author, published “Shiranui Kai Engan (Seashore of the Shiranui Sea)” in December 1959, the 34th year of Showa, and he published *Umi no Kiba (Fang of Sea)* in 1960, the 35th year of Showa. Both were tales of detection which told stories of murder in Minagata City, a fantasy city of somewhere in Japan. It is important that Minakami had conclusion about Minamata Disease, a local strange disease of Kumamoto Prefecture, is not a curse retaliation of ancestors but an organic mercury intoxication occurred by wastewater of Minamata Factory of Shin Nihon Chisso (New Japan Nitrogen) only after 20 days data collection and interviews. He got several medical certificates of patients of strange disease. He suggested that the strange diseases came from intoxication of organic mercury occurred both in Kumamoto and Niigata Prefectures [*The Asahi Shimbun*, September 7, 1968, the 43rd year of Showa].

President Anzai situated himself in an almighty position in the company which enables to get all kind of information including production facilities and products. However, his testimonies at the court told that he did not know the cause of Niigata Minamata Disease and that he believed the disease was occurred by an other chemical substance.

Toru Hioki published that Anzai told what Yoshihiko Yagi of Chiba University told in his court comment in the Tokyo High Court of Appeal that Anzai said his duty on checking wastewater of all factories in Hong Kong, Macao and Taiwan, on March 1, 1971, the 46th year of Showa [Bando, p.235].

Professor Katsuro Irukayama, Medical School of Kumamoto University, extracted crystal of methyl mercury from drain attached on the surface of drainpipe of Kanose

Factory in August 1966, but it is said that Anzai did not pay attention on Irukayama's publication, an important information to chemical industry which resolved the reason of the strange disease, a big social case in Minamata City in those days. However, the Decision of Niigata District Court did not deny that Anzai had not any knowledge of the strange disease.

- (m) There is a notice description in Annual Report, "Within the limit of the Special Taxation Measure Law," but nothing else was written about its abolishment. Nin'i Tsumitatekin (Revenue Reserve) and Junbikin (Reserves) are not set, otherwise.
- (n) Showa Denko committed a mistake not to exclude poisonous by-product "Phenyl Amyl Alanine" in refining process of L-Tryptophan as raw material of medicine for promoting nutrition. There occurred health damages including death in the United States in 1988 and 1989, and Showa Denko and victim people compromised in 1991. ["Haruhiko Nikki: Mugen to Yugen" (Diary of Haruhiko: Infinity and Boiling Resources), downloaded at 21:02, September 6, 2011]
- (o) Akira Nishimura, Professor of Beppu University, had a question about significance of "Asian feudal systems" at my presentation in an English session, 2011 National Meeting, the Japanese Management Accounting Association, "Niigata Minamata Disease and Showa Denko," held on October 9, 2011. His question was about its contents. I explained its significance taking examples of village communities and towns in the upstream areas of the Agano River where Kigyo Joka Machi (company castle town) worked. All of the local congress, primary and junior high schools and shop malls blamed people of downstream for their instituting and declared that Showa Denko had not any responsibility on it. In spite of having dead patients, people of middle and upstream areas did not protest nor oppose operation of the factory. This shows that Asian feudal systems exist still today.

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