The summary of environmental impact assessment report on the project of a new production line of 40000 tons per year soft carbon black with new technique and wet pelletising system, and of the expansion of tail gas power station in CSRC(Maanshan) chemical industry LTD

1. Background

CSRC (Maanshan) Chemical Industry Ltd came into existance in 2000. It is a foreign enterprise in which the CSRC(singapore) and international financial company(IFC)have invested 14.5 million USDs together, CSRC accounts for 12.5 million USDs and IFC accounts for 2 million USDs. The products of the company are mainly carbon black, carbon smoke gum, black model particle using for plastic and other carbon black product and sell the above-mentioned finished product and provide the after-sales service.

At present the company has 169 staffs, covering the area 137158m^2, total asset 351 million dollars. It is now a company with a capacity to produce 60,000 tons per year (tpy) of carbon black and generate up to 6 MW of power from its co-generation facility. In June 2001,the company gained the certificate of ISO-9001: 2000. In December 2003, the company received a Certificate for Compliance with the Standard ISO 14001: 1996, the Environmental Management System. In September 2004, “heijin” brand carbon black is appraised the famous brand product of Anhui province.

In order to satisfy the market need and improve economic conditions of the plant, after the beginning of debottlenecking of the existing facility (U3、U4 production line), the company start to propose the project of new production line of manufacturing 40000 tons soft carbon black annually with new technics and wet pelletising system, and of the expansion of tail gas power station. Anhui research institute of chemical industry accepted the entrust of the company in December 2004. The institute has done a lot of work to finish the assessment to the environmental impact of the project and carried out the assessment report. The company got the approved document to the proposed project set by the Environmental Protection Bureau of Anhui province in April 2005.

2. Relevant laws and rules

1. The Environmental protection Law of the People's Republic of China

2. The Water Pollution Prevention and Control Law of the People’s Republic of China

3. The Air Pollution Prevention and Control Law of the People’s Republic of China

4.Environmental Noise Pollution Prevention and Control Law of the People's Republic of China

5. Prevention and Control of Solid Waste Environmental Pollution Law the People's Republic of China

6. The Law of the People's Republic of China on Environmental Impact Assessment

7. The law of the People's Republic of China on Promoting Clean Production

8. State Department's Ordinance NO.253: "Statute of Environmental Protection Management on Proposed Project"

9. State Department's State-issued (1996) Document No.31: the Decision on Several Problems of Environmental Protection

10. State Environmental Protection Administration's ordinance No.14: "the catalogue of environmental protection management by classification on proposed project" takes effect since Jan.1, 2003

11. HJ/T2.1～2.3-93 "Technical Guidelines for Environmental Impact Assessment (General Principles, atmosphere environment, surface water environment) " and HJ/T2.4-95 "Technical Guidelines for Noise Impact Assessment"

12. National Development and Reform Commission of the People's Republic of China's ordinance No.22: "the Temporary Management Way to the Investment Item of Outside Company"

14. National Development and Reform Commission of the People's Republic of China, Ministry of commerce of the People's Republic of China's ordinance No.13: "the catalogue of advantage industry for outside company investment in Medium western region"(reedit in 2004)

15. Development and Reform Commission of Anhui Province "fa-gai foreign fund" Document No. 1274: the notification of printing and distributing "the Temporary Management Way to the Outside Company Investment Item in Anhui Province"

16. The Environmental Protection Bureau of Maanshan city （MEPB） "ma-huan-han"(2005) document No. 10: "the letter about validating the environmental protection standard and total amount control guideline of the pollutant for the environmental impact assessment to the CSRC(Maanshan) proposed project"

17. The general city programming of Maanshan City and the programming of Cihu Industry Park in Maanshan City

3. Environmental protection target

The company and the proposed project are located in the Cihu industrial park,

which is on the northwest section of Maanshan City. Around the plant site is the planned industrial area, with scattered villager groups, which is the air sensitive receiver. The villager groups named as Zhaoming group No.8 and NO.9 had removed to the new houses in Jinjiazhuang town before May 31, 2005. And the Liannong villager groups No.1 will also plan to remove to other place in three or five years.

The environmental protection target is as follows:

(1) The environment air quality in the area of concern is required to meet the limitation class 3 of GB3095-1996 " Ambient air quality standard".

(2) The water quality of Lower reaches of Cihu River is required to meet the limitation class V of GB3838-2002 "Environmental Quality Standard for Surface Water".

(3) The environmental noise in area of concern is required to meet the limitation class 3 of GB3096-1993 "standard of environmental noise of urban area".

4. Analysis of project

4.1 project description

The proposed project is to install an additional production line of 40000 tons per year new technique soft carbon black with new technique and wet pelletising system, add a 70 tons per hour tail-gas boiler with a set of 12 MW of new power co-generation and building a new warehouse. When the proposed project is carried into execution, the carbon black production capacity will be increased to 120000 tons per year.

4.2 Technique of lead and clean production

The proposed project will produce soft carbon black with the most update technique of double-head structure carbon black manufacturing of US Continent Carbon Company. Just as the existing production line, it has the character of new techniques , crack at high temperature in oil furnace, wet pelletising , tail gas burning and co-generation power. The whole process is controlled by DCS automatically. The safety catenation is design between the equipments, which is the guarantee of system working orderly and steadily.

After expansion the depletion of the company raw material oil nears to the international advanced level. The depletion of water, electricity, steam and the discharge of wastewater and waste gas are lower than that before expansion. By purchase of the lower sulfur content(0.24～0.6%) raw oil --- ethene tar and low sulphur feedstock, the company reduced the emission of sulphur dioxide. By using high effect filter bag to improve the efficiency of

the carbon black dust removing to above 99.9 percent. Except the infrequent waste water from the soft water station is discharged, wastewater contain oil and cleanout wastewater entered the existing wastewater treatment station, which has the treatment capacity of 40 m^3 per hour. After treatment the water flowing out of the station can be reused for technology and keeping clean and zero discharged. It is not only saving the water resource but also avoiding any adverse environmental effects.

By analysis and comparison to the depletion of the resource and energy sources of the proposed project and the discharging amount of pollutant, we can find the company has made a great progress on aspect of promoting manufacturing technology and clean production. The company will attain the domestic advanced level and meet the request of clean production.

4.3 Analysis on the discharging pollutant resource

4.3.1waste gas

With the new carbon black production line set up, which is named U6, the original 10 tons per hour tail gas boiler will be substituted by the new 70 tons per hour tail gas boiler. The new waste gas resource of emission will be increased such as boiler chimney and CBF、EBF、DBF exhaust stack, etc. The CSRC (Maanshan) Company is confident that pollutants emission of all the waste gas resource will meet the limits of GB16297-1996 “Integrated emission standard of air pollutants”.

4.3.2 Wastewater

After the expansion, the types of wastewater are just the same as the original types of the content such as the pollutant of oil genus, COD and SS. The amount of wastewater will be increased. The wastewater contained oil, cleanout waster water and cooling waster water contained carbon black will be sent to sewage farm and be treated to meet the limits of reusing water standard. The congealed water of steam and the water circulation system displacement water enter the wastewater-collecting pond and can be reused. Infrequent wastewater from the soft water station contains some chloride, etc, will be discharged with little adverse environmental effects and meet the limits of GB8978-1996 “Integrated Wastewater discharge standard”.

4.3.3 solid waste

After the proposed project is carried out, the amount of each kind of solid waste will increase. Among them, the mud sediment and oil mud waste from the sewerage treatment station are sent to the kiln factory and burnt. The general industrial solid waste such as production and living rubbish, waste filter bags are collected and disposed by the Municipal

Environmental Sanitation Department. PP packing bag and the scrap iron will be sold to recycle station. The waste fireproof material, which belongs to the hazardous waste because of containing the chrome oxide, will be sold to the Tongjing factory of special kind fireproof material as the raw material by signing agreement.

4.3.4 Noise mitigation measures

Noise sources over 85 dB within the factory are mainly the facilities of air fans for oil furnace, micro-particle pulverizer, the host air fan, gyration drier, tail gas fan, air compressor, oil pumps, water recycle pumps, steamer power co-generator, etc. The company will take the measures to make the noise of facility lower than 70 dB by the sound insulation and muffle, etc.

4.4 Analysis on the Emission Standard and Total Control Amount of Pollutants

4.4.1 Meeting the emission standard

After the upgrade, the pollutant of Sulphur Dioxide（SO_2）, soot dust and Nitrogen Oxides(NO_2) in the waste gas from the exhaust stack of the existing 45 t/h tail gas boiler, the new constructed 70 t/h tail gas boiler and CBF and the pollutant of carbon black dust from the exhaust stack of EBF and DBF are all required to meet the concentration and velocity limits of Table 2 and Class 2 in the GB16297-1996 “The Integrated Emission Standard of Air Pollutants ”.

The discharge wastewater of the CSRC (Maanshan) company is required to meet the limits of Table 4 and class 2 in the GB8978-1996 “ Integrated wastewater discharge standard ” .

Noise at the boundary of CSRC(Maanshan) company is required to meet the limits of class 3 in GB12348-90 “Standard of noise at boundary of industrial enterprises”.

4.4.2 Total Control Amount of Pollutants

Since the Maanshan City site belongs to the state control area of acid rain, the emission amount of SO_2 in production process must be limited. The distributed total amount of SO_2 and soot dust to the CSRC (Maanshan) Company by MEPB is 600 t/y and 150 t/y respectively. After upgrade, the emission amount of SO_2 is 542.8 t/y and that of soot dust is 62.4 t/y, meet the limits of the total amount control.

The distributed total amount of COD to the CSRC (Maanshan) Company’s discharged wastewater by MEPB is 15 t/y. Under the amendment of the original sewage system, the clear and rainwater are detached from the dirty water. The dirty water contained oil, etc is sent to sewage station and decontaminated by gas-flotation facility. Almost the waster water can be reused for production and keeping clean. The infrequent discharge wastewater with 0.8

t/y COD can meet the water pollutant limit of the total amount control.

5 Environmental impact assessment

5.1 Air

（1）The present quality of atmosphere environment

Without exception the average concentration per hour and per day of SO_2 and NO_2 and the average concentration per day of PM_{10} in concerned area meet the limits of GB3095-1996 “Ambient air quality standard”. It indicates that air quality is in good condition.

（2）The assessment of atmosphere environmental impact

In normal conditions, the predicted values of average concentration per hour or per day offered by the emission pollutant of SO_2 and carbon black dust are all under the limits class 3 of GB3095-1996 “ambient air quality standard”. Thus the atmosphere environment will be little affected by the proposed project. And the planned function level of environment will not be changed. It has little effect on the health of people who lived in the concerned area.

In non-order conditions, firstly when the efficiency of the dust removing at CBF dropped by 16.67% the carbon black dust will emit from chimney of the tail gas boiler. The contributed concentration to the air environment is lower than the assessment standard. Secondly, when starting or shutting down the production line, the contributed concentration to environment by the emission of carbon monoxide is under the limit of GB3095-1996 “Ambient air quality standard”. Thirdly, when the efficiency of the dust removing at EBF dropped by 25% the contributed concentration to the concerned area of PM_{10} by the carbon black emitted in short period is under the limit of assessment standard.

5.2 Water

（1）The present quality of surface water environment

The monitoring concentration values of pollutants in the water of lower reaches of Cihu River in Maanshan City are under the limits class V of GB3838-2002 “Environmental quality standards for surface water”.

（2）Water environment impact assessment

When the product system is in order, most of the sewage is recollected and reused after treatment. The amount of discharge wastewater is reduced less than that of original facility.

When the sewage treatment station is not in order, the discharged wastewater without decontamination enter the Cihu River and the mixed concentration of COD

will be raised from 23.6 mg/l to 32.05mg/l, arising by 35.81%. Although the COD concentration can meet the limits class V of GB3838-2002 “Environmental quality standard of surface water”, the discharged wastewater has produced a great effect on the water quality of the Cihu River.

The discharge of oil will also produce a great effect on the water quality of the Cihu River. Because the oil, which is lighter than water and it cannot be easily mixed with water and float on the surface of the river, results in that the river is polluted seriously.

Therefore, the company must continue to strengthen the management of sewage processing facility basing on the existing good foundation. The company must set up a wastewater pool for the collections of the accident exhausting wastewater and early rainwater. Wastewater can be reuse after processing to save the water resources and avoid environment of pollution.

5.3 Solid waste

After the upgrade the solid waste within the factory is as follows:

180 t/a of sludge, oil mud waste, rubbish, scrap iron, 4200 pieces of PP packing bags and 16500 pieces of waste filter bags are general industrial solid waste and will be treated in a appropriate way.

70 t/y of waste fireproof material, which belongs to the hazardous waste because of containing the chrome oxide, will be sold to the Tongjing manufacturing factory of special kind fireproof material as the raw material by signing agreement.

All kinds of solid waste will not be reserved in the factory for long period.

5.4 Noise

The monitoring results of noise at each boundary of CSRC (Maanshan) Company indicate that daytime and nighttime noise meet the limits class III of GB12348-90 “Standard of noise at boundary of industrial enterprises” except the west side of the company. When the proposed project comes into execution, the company planed to take the measure of muffle, sound insulation, vibration insulation and shock absorption to mitigation the noise of facility, and set up a noise barrier to make the noise at west boundary to meet the limit of standard mention above.

6. Recommendation on pollution prevention and control

（1）One hand the company should strengthen the management to the loading of raw oil avoiding potential spillage from the fuel oil and feedstock storage tanks, on the other hand the company should take measurement on leakage-proof of soil around the railway line in the factory and setup a insulated channel, which can collecting the

rain water contained the leaked oil and sent them to the sewage processing station and avoid the pollution to the environment outside. Setting up the collecting water pool to meet an emergency can collect wastewater by accident and initial period rainwater and send them to the wasterwater processing station and put an end to discharge outside without meeting the limits of relevant ordinance.

（2）It is stressed that the company must strengthen the management of the filter baghouse on the production, use the high-grade filter bag to achieve the required collection efficiency of 99.5% in the exhaust dust filter baghouse, ensure the emissions of carbon black from these stacks to meet the limits of relevant ordinance.

（3）It is necessary to increase the awareness of the safety and environmental protection of the company staff, and enhance the management and check-up of production unit and post. It is important to enhance the management of the waste fireproof material, which belongs to the hazardous waste, and comply with the requirements of "methods of displace linked-receipt management to the hazardous waste " and ensure the illegal disposal of hazardous waste does not occur. It is help to control the displacement of the hazardous waste effectively for the department of management and avoid the hazardous waste discharged to the environment in the displacing process.

（4）By planting trees and setting up noise barriers, it can mitigate the pollution of the noise and ensure the noise at the boundary to meet the standard.

（5）There are a number of emergency situations that may arise resulting from fire, explosions, spillage etc and has designed emergency responses to these situations. Preventative measures focus on management, training, personal protective equipment and written HSE management procedures. Once the accident occur, it must take the specify measure rapidly to lower the damage and loss to minimum.

7. Public participation

In the process of environmental impact assessment, sixty pieces of "Consultant Table of Public Opinions" were distributed and drawn back fifty-nine. It indicates that Ninty-two percent of consultants have come to an agreement to the construction of the proposed project.

8. Conclusion

The project of a new production line of 40000 tons per year soft carbon black with new technique and wet pelletising system, and of the expansion of tail gas power station in CSRC (Maanshan) chemical industry LTD belongs to investment item of

foreign investor. It meets the state policy and has the obvious economic performance. After its construction, the project can promote the development of the local enconomy, increase the opportunity and has the better social performance. As long as the company complies strictly with the designed rules and criterion of safe production for chemical industry, ensure the discharged pollutant to meet the state environmental standards and total amount control with the mitigation measures implemented, it will combine the performance of economy, society and environment. In view of environmental protection, the conclusion of assessment report is that the construction of the proposed project is feasible.

Chinese edition is as final, English edition is only for references.