



**HACCP SYSTEM MANAGEMENT OF 4 STARS HOTEL IN BANGKOK; CASE
STUDY GRAND MERCURE FORTUNE BANGKOK**

สำนักหอสมุดกลาง



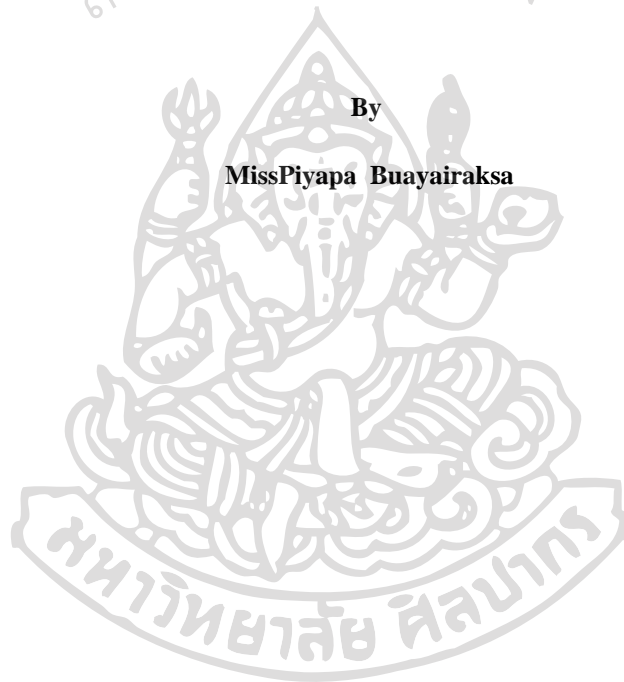
By

MissPiyapa Buayairaksa

**An Independent Study Submitted in Partial Fulfillment of the Requirements for the Degree
Master of Business Administration Program in HOTEL AND TOURISMANAGEMENT
International Program
Graduate School, Silpakorn University
Academic Year 2012
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The Graduate School, Silpakorn University has approved and accredited the independent study title of “ HACCP System Management of 4 Stars Hotel in Bangkok; Case Study Grand Mercure Fortune Bangkok ” submitted by MISSPiyapa Buayairaksa as a partial fulfillment of the requirements for the degree of Master of Business Administration in HOTEL AND TOURISM MANAGEMENT

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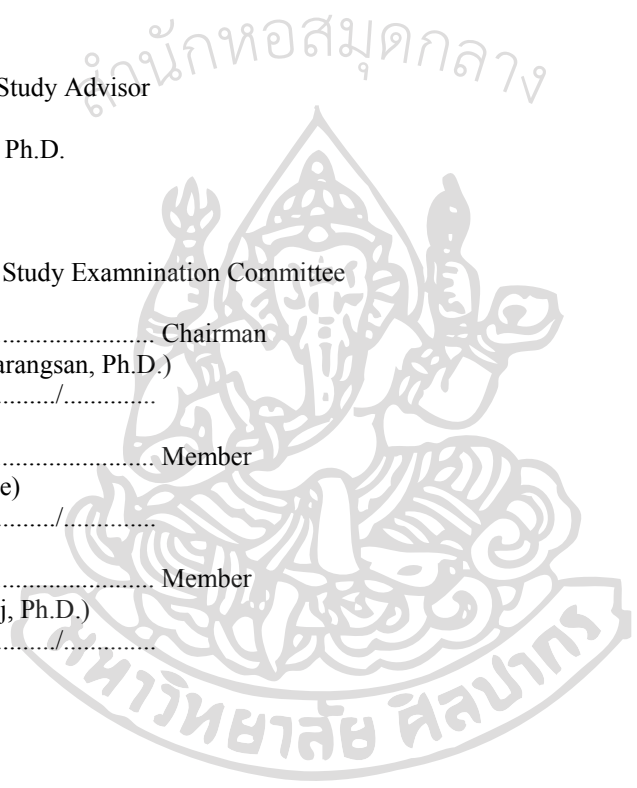
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The propose of this paper is to study general condition of 4 stars hotel that are they use HACCP in their hotel and define about the benefit of HACCP System, it can protect and solve problem about food safety or not. In this independent study, the researcher has defined scope of the content that kitchen of 4 stars hotel, how did they already apply HACCP System in their hotel. And adding HACCP system in hotel can help to protect and solve the problem about food safety in effectively or not.

Quantitative and Qualitative were used to collect the data, the questionnaire was separately in five part; The first is demographic of research, second is knowledge and understanding in food safety system (HACCP and Food sanitation), third is attitude about food safety and hygiene follow HACCP and Food sanitation, forth is applying HACCP and food sanitation in hotel and lastly is outcome of using HACCP and Food sanitation. All part was used to measure about the knowledge and attitude of food safety of staff in kitchen. For qualitative, the researcher have dept interview in Head level of kitchen to find out their knowledge, attitude and how they apply and see the relation between food safety and HACCP.

The sample of this research was chosen from staff that expert in Kitchen of four stars hotel in Bangkok which have good standard follow their international chain, case study Grand Mercure Fortune. The researcher will focus on their knowledge and attitude because it has direct effect to food safety system and HACCP. This research will have benefit for food handler, head of staff and top management of food industry and hospitality.

Program of Hotel and Tourism Management International College
Student's signature.....
Independent Study Advisor's signature.....

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Academic Year 2012

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In addition, a thank you all kitchen members of Cold Kitchen, Bakery Kitchen, Main Kitchen, Thai Kitchen, Coffee Shop Kitchen and Japanese Kitchen, whose introduce me the real work experience and supported me during internship in hotel and gather the data.

I thank the Silapakorn University International College, Thailand and Vatel International School, in France to arrange this course that gives me a chance to study in the very good university, gain knowledge from high quality lecturers and meet very good friendship with my class mate. Lastly, I would like say thank you to Dr. Sudawadee Chanpiwat, who always support and helpful me throughout the course.

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CHAPTER 1

INTRODUCTION

1.1 Company Background

Grand Mercure Fortune Bangkok

History

Grand Mercure Fortune Hotel, Bangkok is one part of C.P Tower II building that was built in 1989. The first operation was authorized by the Ministry of Interior and the operations of the Board of Investment under the name Fortune Bluewave Hotel by Siam Nam Chok Company. Located on Ratchadapisek Road on the area 18 acres. After that was changed operation to under Golden Tulip then they changed again in name Best Western Fortune Hotel till 1st September 2004, Accor Asia Pacific came and manage this hotel. And have grand opening in name Grand Mercure Fortune Hotel, Bangkok since 18th August 2005 until now.

Management

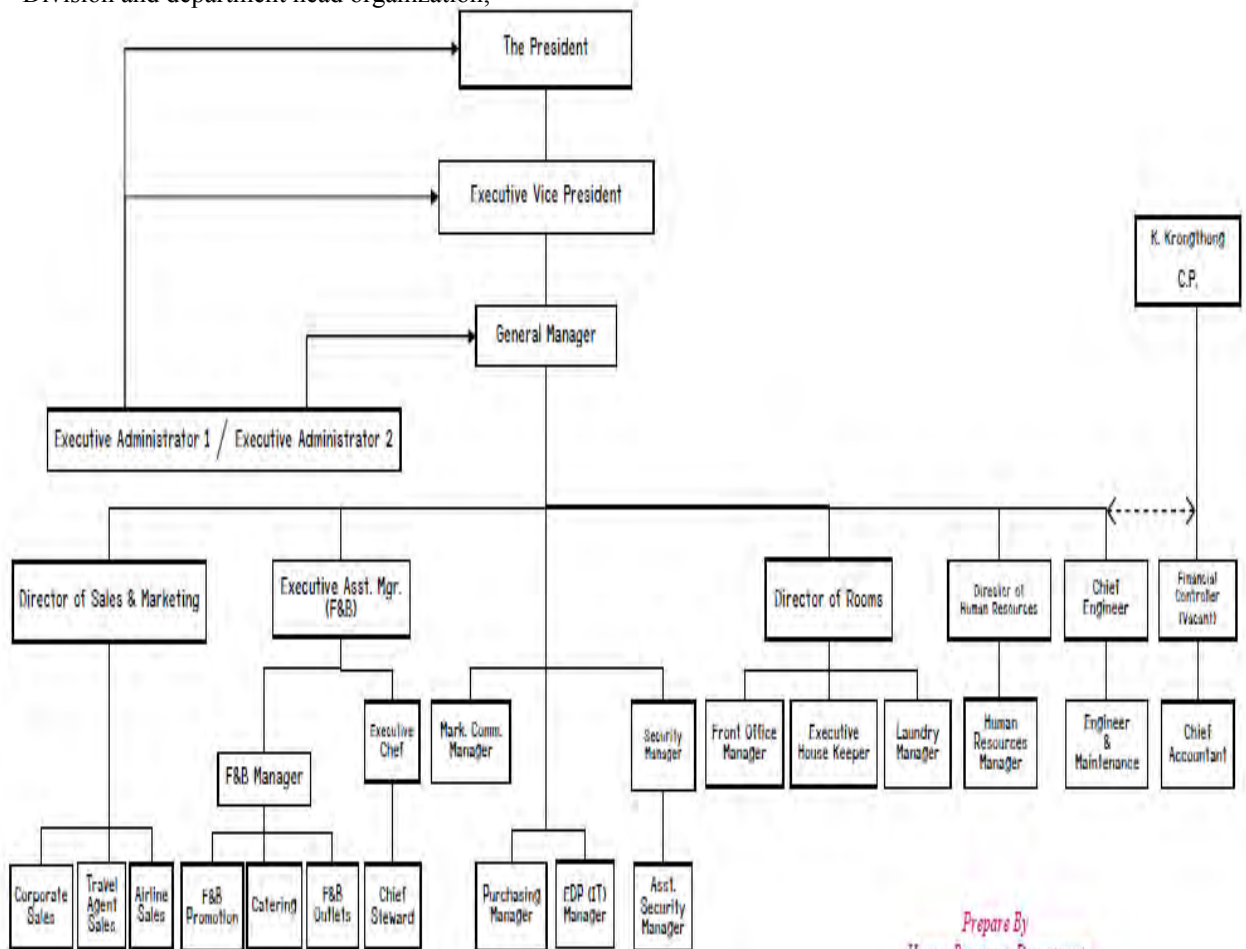
This hotel is in Charean Pokpand Group and management by Accor which is the world's leading hotel operator and market leader in Europe, is present in 92 countries. It builds a solid vision of sustainable development thanks to the experience of its 160,000 employees in Accor brand hotels worldwide and millions of customers around the world. Accor provides an extensive offer including complementary brands from luxury to economy that are recognized and appreciated around the world for their service quality. The brands under Accor are Sofitel, Pullman, MGallery, Novotel, Suite Novotel, Mercure, Ibis, Ibis Styles, Ibis budget, hotelF1 as well as Thalassa sea & spa. They continue growing in every year. Most of customer was believe in operation of this brand.

For Charean Pokpand Group (C.P. Group) was ranged in world's leading company and also in Thailand. There is very powerful in many industries and C.P. group was divided in ten business groups. Those shown C.P. has strong financial and

reliable. The top management of C.P is well-known in society; Mr Thanin Jiaravanon is the first billionaire in Thailand from Forbes Magazine. He has a lot of Honorary Degree from many universities in Business Administration and Agriculture. In part of Grand Mercure Fortune, Ms Araya Arunanondchai is the President of hotel and also well-known in society. She always support event about culture such as International Thai Carving Contest Queen’s Cup and Mom Ngamjittra Bhurachattra Day which organize in every year.

The operation of Grand Mercure Fortune was control by both Accor and C.P Group but C.P Group have more power to make decision about operating. There are quality control teams from both to check and measure the standard quality of their service and operation.

Division and department head organization;



Prepared By
Human Resources Department

Grand Mercure Fortune Bangkok (four stars hotel) – a stylish hotel with 400 spacious and well appointed rooms and suites including a “Club Prestige” Floors and a Presidential suite. The hotel combines traditional Thai hospitality and international flair within the vibrant city of Bangkok. Conveniently located at the junction of Ratchadaphisek, Rama 9 and Asoke-Sukhumvit Road, the hotel is attached to Fortune Town I.T. Mall and Shopping Complex, with over 1,000 retail outlets. The hotel was renovated from September 2012 to December 2012. The hotel was located with airport Expressway close by, the MRT (Metro) station at its doorstep, business, shopping, cultural and tourist attractions are within easy reach. 4 restaurants, 2 bars, comprehensive meeting and banquet facilities, a modern business centre, a complete fitness centre with an outdoor pool and spa make Grand Mercure Fortune the perfect choice for both business and leisure. It's all part of our "**Service with a smile**" and you'll enjoy the difference that we make. Parking is available for 3,000 vehicles.

Guest room, it is on 14th to 26th floor; all 400 guest rooms are tastefully furnished and feature the latest amenities. First-class accommodation is provided with 40 spacious suites carefully decorated to make you feel at home. Type and number of guest room at Grand Mercure Fortune. 279 **Superior Room** (30 Square Meters), 47 **Deluxe Room** (30 Square Meters), 19 **Studio Suite** (43 / 50 Square Meters), 39 **Club Prestige** (30 Square Meters), 14 one bed room suite (50 – 70 Square Meters), 1 two bed room (100 Square Meters). The facilities of guest room are; Individually Controlled Air Conditioning, Cable TV, Electronic Safety Deposit Box, Tea-Coffee Making Facilities, Mini-Bar, 24-Hour Room Service, Radio, High Speed Internet / Broadband / Wi-Fi, Master control panel, Bathrobe Sleepers, Hair Dryer, and Emergency Flashlight.

Dining and Entertainment of Grand Mercure Fortune; Treat yourself to some of the best Asian cuisine – Thai (Rim Suan Restaurant at 12th floor), Japanese (Agehan Restuarant at 1U floor), or Chinese (Nan Yuan Restaurant at 1U floor), this is three signature restaurants of hotel. Or enjoy your favorite international dishes any time of the day in the World Restaurant One Ratchada. You can settle down with a quiet drink in the Lounge Metro Le Rendez-vous (1st floor). A Great place to unwind and relax with your favourite drink amid soft piano & violin Music. There are daily bakery at

Fortune Bakery (1st floor), you can select your favorite cakes and a huge variety of gifts, cookies, wine, beautifully homemade hampers, ginger bread house and lots more.

To support restaurant and food service, there are seven kitchens; Main Kitchen, Cold Kitchen, Thai Kitchen, Japanese Kitchen, Chinese Kitchen, Coffee Shop Kitchen, and Bakery Kitchen. In each kitchen have responsibility to preparing and cooking in different kind of food follow the name of kitchen.

Main Kitchen, they have responsibility to preparing and cooking European food and International food to serve in line buffet and banquet function. Another is sliced beef and other meat. This is very important because they must do in one time to have perfectly beef both size and weight.

Cold Kitchen, they have responsibility to preparing and cooking salad, sandwich, canapé, cold cut, and fruit to serve in line buffet, banquet and guest room. They have to manage all fresh vegetable and fruit in hotel. The heart of this kitchen is Salad Dressing, this is homemade dressing. The main of dressing are Caesar dressing, Honey dressing, and Italian dressing.

Thai Kitchen, they have responsibility to preparing and cooking Thai food to serve in line buffet and banquet function.

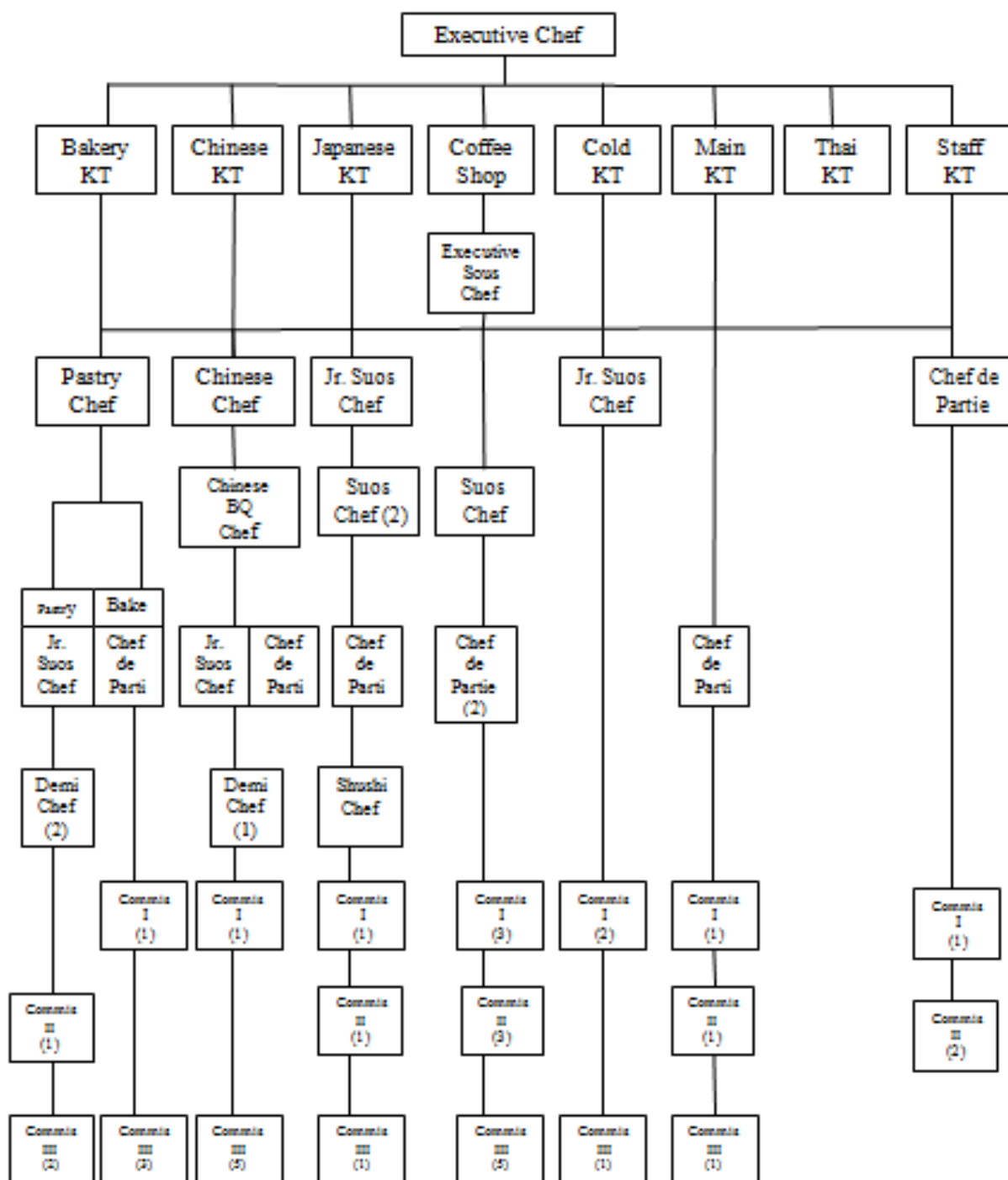
Japanese Kitchen, they have responsibility to preparing and cooking Japanese food to serve in Aneghan(Japanese restaurant of hotel)

Chinese Kitchen, they have responsibility to preparing and cooking Chinese food to serve in Nan Yuan (Chinese restaurant of hotel)

Coffee Shop Kitchen, they have responsibility to preparing and cooking all kind of food to serve in One Rachada (main restaurant of hotel.)

Bakery Kitchen, they have responsibility to preparing and cooking desert and bakery to serve in line buffet, banquet and bakery shop. Creative is very important for this kitchen because it is color for line buffet and attract customer to buy.

Structure of Kitchen



1.2 Internal Environment

SWOT

Strength

- It is good standard hotel manage by well known international chain (Accor).
- The hotel has strong finance from the owner and business group.
- The hotel has contract with airline, they will send their crew to stay at hotel when plane landing to Thailand.
- The hotel is well located in business area and shopping center.
- The Princess Somsavali goes to give scholarship and open “Mom Ngamjittra Bhurachattra Day” every year.
- Most of staffs work here for a long time (someone is about 20 years) those made them have good skill and much experience in work.
- Hotel is close by MRT station; there is doorstep of MRT nearby hotel.
- Hotel is in C.P. group those made the company in the same group will use Grand Mercure Fortune before other hotel.
- The owner and management, they are well known in high class of society those made people who have good relationship with them use Grand Mercure Fortune.
- Hotel was renovated last December; customer would like to use new room.

Weakness

- The hotel attached with Fortune Town those made some guest do not eat food of hotel but they go to eat at food center and restaurant at Fortune Town.
- The hotel was built long time, many people think it is too old.

- The hotel attached with Fortune Town, there are a lot people at lobby those make it is not private.
- Equipment is quite old fashion which along the age of hotel.
- Most of staff have low educated, it is difficult to develop them to multi skilled.

Opportunity

- Growing of tourism and hospitality industry in Thailand, nowadays tourism and hospitality industry earn lot money to country. Many tourists come to Thailand those made demand of customer in accommodation increased continually.
- Increasing number of travelling from Asia and Middle East will make number of tourist around the world. Especially in Thailand which is very good destination for them both value and convenience.
- There is annual International Thai Carving Contest Queen's cup every year. That is very big event of Grand Mercure Fortune and TAT (Tourism Authority of Thailand) held this contest. Receive attention from university in Thailand and organization in both inbound and outbound.
- Open AEC (Asian Economic Community) about 31 December 2015. AEC is participation of countries in Asia area. It like a free trade area, workers can go work anywhere in country's member that shown easy to go travel. Those will be increasing arrival tourist to Thailand because Thailand is center of Asia which is very good location to travel and stay. The accommodation will be important to them.

Threat

- Hotel located in business area which has traffic jam in peak hour.
- Increase minimum wage 300 baht
- There are a lot of competitors in the same chain and other chain.

- Natural disaster such as flooding in Bangkok.
- The global economic crises which decrease international tourist go out and spend money.

1.3 Porter's 5 Forces

Power of supplier (low power for other suppliers and high for CP)

- There are a lot of supplier of raw material such as food, ingredient, and etc.
- Hotel always order raw material in large.
- Grand Mercure Fortune has the same owner with CP, some of raw material such as egg. They order from CP, hotel has low power to bargain.

Power of customer (high power)

- There are a lot of hotel chains and individual hotel those made customer have many choices.
- People need something new; they would like to have new experience.
- The price is not main factor to make decision because in the same price, there are a lot of choices.
- Although the company that subsidiary to C.P. Group such as True Corporation when they go to seminar or meeting in Grand Mercure Fortune, most of them will have a lot of request because they think this is their hotel.

New entrants (high)

- There are a lot of hotel chains and individual hotel was open in every year because increasing of traveler in Thailand.
- Hotel is high investment but also earn large profit those made many people would like to put in this business.
- Growing of tourism industry, a lot of people need to invest business to support and earn profit from it.

Substitution (high)

- There are variety of accommodation in hospitality industry such as service apartment, resort, motel, home stay and etc.

Industry competitor (high)

- There are a lot of competitor in hotel industry both in Accore group, other chain and individual hotel.
- There are standard hotel in same level and higher around area.

1.4 Conclusion

Grand Mercure Fortune has long time history in hospitality industry, they have changed management team to develop and meet the standard of service. Now it was managed by Accor which is the international standard chain and this hotel is one part of C.P. Group that is world's leading company. That shown this hotel is very strong background because this business group is very powerful in the same business. Top management of this hotel is well-known in society that also

affect to the hotel, many customer have good relationship with the management of hotel and from the company in C.P. Group. This hotel is the first choice of them. In cause of raw material in hotel, they will order from C.P. too. Hotel has very good relationship with airline because there are contract between hotel and airline, they will send their crew to stay at hotel when plane landing to Thailand.

Grand Mercure Fortune was built for long time those made the image of hotel is old fashion but hotel have finished renovate on last December (2012). It make hotel look better and can catch new customer. The hotel is very well location in business and shopping center; there is Fortune Town, Central Rama 9, Esplanade Ratchada, Robinson, Thai Cultural Center, and etc. That is adapted to people who love shopping and convenience. Except that hotel is very close to doorstep of MRT which easy to travel to other part of Bangkok even thought the traffic in this area have traffic jam.

Staffs of Grand Mercure Fortune work in this hotel for long time, someone more than 20 years those make them have very good skill in their responsibility, lot of experience to solve problem or service in good quality and good knowledge about hotel information. They have royalty in organization and good relationship with their workmate. Customers can be believed that will be received nice service and high quality product from them. Although they have lot of experience but it difficult to develop them to multi-skilled staff because most of them have low education and difficult to promote them to higher position.

The overall of Grand Mercure Fortune, this is very good benefit for business and leisure tourist who love shopping and convenience life in standard hotel. Nowadays, there are a lot of types of accommodations because growing of tourism around the world, also in Thailand. Especially open AEC in a few years every business in hospitality industry try to prepare their business to reach tourists. In part of accommodation, there are many new investors even though high investments in this business but it get lot profit too. Those made more choice for customer. In the same price, customer will be comparing the best benefit accommodation for themselves. Those made customer have strong power choose

service. That shown high competition in this industry. Grand Mercure Fortune has a lot of competitor in area both inside and outside of chain. There are a lot of standard hotel in the same level and higher in nearby area. The strong public relation and marketing is necessary to support them.



CHAPTER 2

LITERATURE REVIEW

History of food and food regulation

According to History of food quality standards by R adomir Lasztity, Marta Petro-Turza and Tamas Foldesi said that food law was in society for long time ago. It is referred to traditional food regulation in Egyptian, Chinese, Hindu, Greek and Roman literature. The main factor which had influence for the regulation of food in the Middle Ages is trade which are widely available in all around the world. In that period, traders try to protect of falsification of their food products. They don't need to have problem in both business partner and supplier. Then organization of the state, municipal and other local authorities started to use food control in their areas to support traders and consumers. Until the large changes in food product because of urban population is fast growing and became industrialized societies, including with public health problems which more seriously. Those made in the end of nineteenth century, there are a lot of food laws in industrialize nations. During the end of nineteenth and early twentieth century, still used former food regulation but pay more attentions in sub branch of laws which concern with food. In 1920s almost of national standards organizations in Europe need to improved health and food control and international food trade was expanding rapidly those made stimulated cooperation at an international level. After World War II, international standardization is stronger than the past under concept of ISO. In 1962 there is combination between FAO and WHO Food Standards Program together. The trend of food regulation in this period is cooperation at an international level.

In Thailand from information in King Ramkhamhaeng's famous stone inscription in the early 13th century, do not have law and regulation about food because in that period Thai people did not pay attention on it. But it is inscription about the major ingredients of Thai cuisine were rice and fish. Aquatic animals, plants

and herbs are used much in preparing meals. The generally cooking methods still widely practiced are stewing, grilling and baking. Other methods are influence from other country such as frying is an influence of Chinese cuisine. The basic ingredients of Thai food, always fresh spices and herbs. For Thai meal, do not served in course; they are served every dishes at the same time allowing the various dishes to serve altogether. All food is eaten with rice which is main staple for the Thai people until now. Although, the consumer was changed and Thailand has been face with the phenomena of economic and health transitions¹⁰ since the mid 1980s follow Vongsvat Kosulwat (2002) said. The economic structure was changed from agriculture to industry and commerce, resulting in inequitable income differentiates. Social structure and lifestyle were changed from a rural to an urbanized society. Other changes in food of Thai society for example; food was produced for sales and exportation more than for domestic consumption; consumption's food was purchased more than produced; and food consumption was influent by advertising and commercials. To view this nutrition and health transition in relation to all other social changes, the changing patterns of demography, disease and food consumption which made people pay more attention in food quality and food regulation.

Nowadays the food regulations still important follow Stuart Smyth (2012) explained that a lot of people were died from the consumption of danger food. For long time that science-based food safety testing and detection mechanisms were developed and operation to improve the quality of food. To minimize contaminations of food and risks of consuming harm food products. But there are not system functions which safety 100% and consumers have occasion to die from the food that they have. The risks evaluations add more effective to analyze the general population that might be risk from any innovations follow the regulation such as GM food products (genetically modified food), many countries need to spent money about it and some countries do not allow to use and plant GM product.

From above there are many food regulations from past till now because people need safety and quality food. The sequel rapid growth of population and the world changed made the problem of food safety likely Hari Purnomo(2006) said that nowadays food safety is very important issue to be discussed and many organization

pay more attentions such as hospitality industry, food and beverage, government officials and public health institutions. Because consumers need food safety, the food processors and food handler must try to make them assure that the food is not harm and not make them illness. In addition they should explained how good knowledge, good skill on food safety that processors and handler must responds. When talk about food safety, it is include food hygiene; include processing, preparation or handling of food to make sure that it is safe to eat, don't have hazards. The word hazard is an activity or process which can result in negative consequences and thereby provide a source of risk related to food safety.

The food contamination

The contamination was occurred due to several causes such as improper food preparation, handling and storage can cause outbreaks. Hazard related to food is due to biological, chemical and physical contamination that can cause a food poisoning, illness, disease.

- Biological or Microbiological Hazard is mainly caused by bacteria, fungal, viral and parasite micro organisms. Florez et al. (2005) observed gastroenteritis outbreak in both developing and industrialized countries. They found that the ingestions of food contaminated with infectious or toxigenic micro organisms is a major cause of morbidity and a very significant cause of death throughout the world.

- Chemical Hazard classified as naturally occurring, indirectly and directly added. Naturally occurring is toxicants that already exist in the food itself such as histamine in seafood; cause an allergy or intoxication. Toxicants can directly cause illness after injection. However some natural food also contain slow acting toxicants, if it consumed for a long period of time it could promote chronic disease and called as carcinogenic substances (Potter and Hotchkiss, 1995) (O'Keefe and Kennedy, 1998)

- Physical Hazard usually occurs when food contaminated with environmental contaminants during processing and packaging is consumed. Glass fragments, cuts of

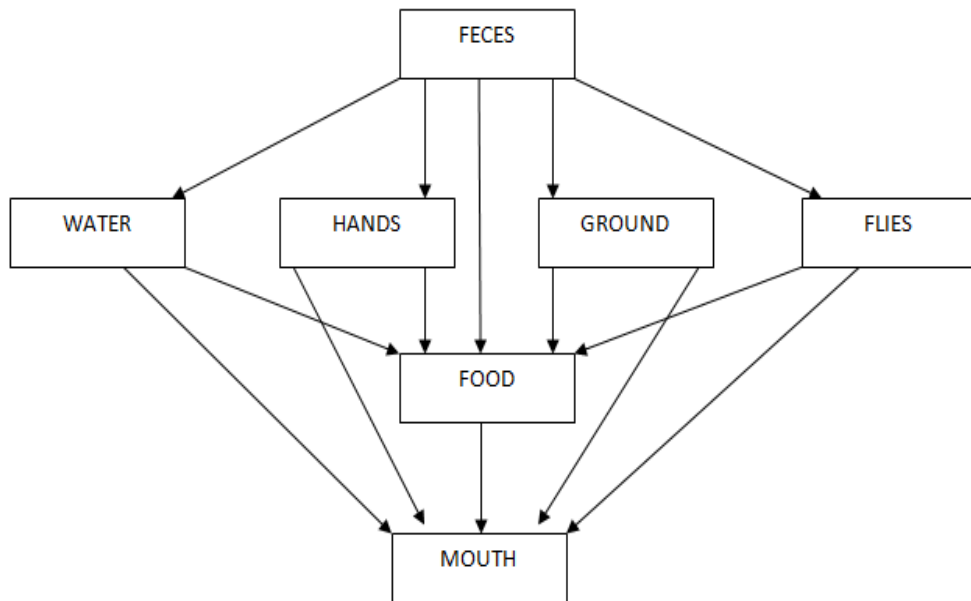
wood, stones, small piece of metal and some other personal effects are concern as physical hazards. Those contaminants if ingested could give some health risk.

- Other contaminants (Ihegwagu Nnemeka Edith and Emeje Martins Ochubiojo) such as metals, it is contaminants of food that many people unintentional. Above visible contaminant, there are toxic through air, water, soil, industrial pollution, including silverware and other way those they go into food. For example silverware and enamelware have poor quality which leaching zinc into food. A tin plate is a source of tin contamination that was used for making container for canned foods and processed foods. In addition when food was cooked in aluminum ware also contamination too. Even though cooper is necessary to human body but copper contamination is harmful food. An old preservation and flavoring of food, smoking of meat and fish can make food contaminate which are carcinogenic. Materials are used to pack also contaminate foods. The chemical which used to improve nutritional value of food, maintain freshness those can make food contaminate if add over amount specified.

Diseases was spread and contaminated in several ways like Sari Huuhtanen and Ari Laukkanen (2006) said that diseases are into food in different way, it always occur because of lack of food sanitation and hygiene. The diseases can into human body as the follow;

- Direct into human feces
- Infected drinking water
- Contaminated water or soil in vegetables, fish and other food products.
- Contaminated water by accident such as swimming.
- Contaminated dust from inhalation.
- Infected water
- Contract with infected animal.
- Contract with infected individuals.
- Impact from dust sediment
- Impact of animal and bird dropping.

The large problem of human health came from pathogenic bacteria, viruses, parasitic protozoa and helminthes which almost found from excreta of infected individuals. Type of soil and location has effect to spread of pathogens. The movement of liquid in soil is one factor that makes pathogens were circulated. That shown in part of toilet is very important to support food safety system.



The route that the diseases spread into human body.

Also in Thailand, Masami T. Takeuchi¹ and Kangsadan Boonprab (2006) state that Thailand is the one of the world leading in agriculture producer which strongly growth of agriculture industry and expert of food. Those made food safety has become important topic in Thailand. The main public health problems in Thailand are microbial contaminated drinking water and food diseases. From the economic research service 2004, there are approximately a million cases of acute diarrhea and food poisoning is more than 120,000 per year. Most of people who living in poor environmental sanitation and poor personal hygiene, will have food borne diseases. In addition, people who have inappropriate consumption behaviors such as consume raw or undercooked food are one of the main causes of diarrheal diseases in Thailand.

Hari Purnomo(2006) state that knowledge and attitudes about food safety are very important to the hospitality industry managers who have responsibility in manage and control their food handlers in preparing foods and other process in food operation in their food outlets. Food safety is concern about the behavioral change, it support to set implement their success in food safety.

Tool to measure and solve food quality

One key word that we always find out in a lot of journals or researches about food safety or food regulation is food quality, many researchers try to define meaning of it. For Marie Ferree(1973) define that food quality is all about excellence characteristics such as taste, cleanliness, hygiene, decoration, and smell of food which make food buyer acceptable. In actually food quality is come up with the standard consumers, they will not accept to have something bad most of them select sanitation and safety food. There are many tools which used to measure and support quality of food Such as Six Sigma and Total Quality Management (TQM);

Six Sigma (Robin Ford) is a system which cover and flexible for achieving in business. It moved by understanding of customer needs, business process and improvement. Many large companies have successful by use this theory. Including General Electric Company, Lee R (2005) said that Six Sigma can work well in food industry for example executives of fast-food giant McDonald have asked when they started work with Stamford-based GE Commercial Finance's Franchise unit to identify about Six Sigma, if Six Sigma helped General Electric Company to be one of the most successful business in the nation, why Six Sigma cannot work with the food industry? The commercial food processing industry need to link with quality practices. Although the food processing industry is change slowly and conservative. To understanding the quality practices in food processing need to understand consumer, nature, and regulation of food.

Hsiang-Chin Hung and Ming-Hsien Sung (2011) describe that at the present Six Sigma was accepted in many industries, also in food industry. To approach this

theory has been follow the DMAIC which came from define-measure-analyze-improve-control. The DMAIC was used to solve the root of problem to decrease error process and cost related to poor quality by i mproving efficiency of process. The process of Six Sigma operating help to decrease defect process and focuses on improvement. The meanings of five letters are as the follows; **Define**, the management should find out the problem according to customer feedback, strategy and mission of organization, define customer needs then set their goal. **Measure**, it is important step on Six Sigma to change those helps to refine the problem and find out the root because it will be the objective of analyze step in DMAIC. **Analyze**, this step will use data analysis tools and process analysis techniques to explore and check the root of the problem. **Improve**, the goal of the improve step is to search and use solution that help to limited the cause of problems, decrease the variation in process or protect a problem happen again. **Control**, after have results documented from improvement step. Need to settle standards measure to control or maintain performance of organization.

Total Quality Management (TQM) is the way of figure and creative the quality values to meet business excellence and to be leadership in customer's expectations. For food industry which requirement food quality management should understand nature and need of consumer. What the customer wants and what they should get from food (Jagat bahadur K.C, 1998).

Clemens Morath and Reiner Doluschitz explained about current situation of Total Quality management applications in food industry. Each organization has different in operation activities and find out the requirements of TQM that right with the way of their operation. Especially, in cases that organization is aware mandatory measures or implements measure which have any clearly impact, the enterprises will successful and meet high levels of achievement.

The basic principle of TQM should be operated by using eight QM principles otherwise the restaurant system will not fulfill of the quality standards in the healthcare management system said by Gunjan Patel and he explain a little about the principle of Total Quality Management as below;

- Customer focused organization, organization should understand customer need, reach customer requirement and beyond expectation because organization is depend on customers.

- Leadership, Leaders build unity in the organization. They are important factor which make good or bad internal environment in organization by create and maintain.
- Involvement of people, people in every level are important and their capability is useful for organization.
- Process approach, managing process is necessary in activities and related to get effective result.
- System approach to management, identify and managing a system of internal relationship process as a system that make organization get effective achieve in their objective.
- Continual improvement, performance of organization need to improvement in continually. It should be long-term objective of the organization.
- Factual approach to decision making, Effective decision is very important and depend on analysis of data information.
- Mutually benefit supplier relationships, organization and their suppliers should support and have good relations because it can create value for both.

Lastly, Gunjan Patel states that TQM focus on management system which have goal to increase the customer satisfaction in lower cost.

Except the tool to measure and solve the food safety, the way to action is also important those make in every organization should have the same practice follow the food sanitation. Food sanitation is support food safety system and hygiene in organization as the follow;

Food Sanitation

Food sanitation was used in food industry and in house for long time like Glenn G. Slocum (1956) said that food sanitation programs were used and put in environment of the first federal food and drug law. And continue to hold it on the important position in Food and Drug Administration about 50 years. A sanitary is very

seriously about injurious substance especially infectious microorganism. Those include materials of food that are disgusting food which representative of disease. This is important factor to prevent health of consumers because there are a lot of current food contaminations which harm to health that cannot be measured. Even though use modern analytical techniques in examination of food products. The food and drug law that follow food sanitation was became generally accepted by food industry and public. The requirements of law and purpose of the food sanitation may be stated that food must be clean in every step. Start from preparing, food must be prepared from clean and clean-cut raw materials. Then in step of production and dealing, there are policy from the Food and Drug Administration that obligation them to follow the food and drug law to help them improve their sanitary quality of food supply.

In addition apply HACCC system in organization, food sanitation is also important. Follow Food sanitation manual by Health Department of Bangkok (2009), food sanitation is management and control environment that concern with food activities include staff. To keep food clean, aseptic, helminthes and chemical this might be danger for health and life of consumers. Cook and owner of food business need to understand in food sanitation to pass cleanliness and safety food to consumers. If they do not understand, their food is not clearly. It may be food contamination. Food sanitation is long term food safety those mean their food is not harmful at now and in the future. So, cook and owner must be knowing factor that have effect with food cleanliness and safety. From principle of food sanitation, there are five factors those have effect with food contamination as the follows;

- **Location Hygiene** (prepare, cooking, service and sales), James Bailay(1977) explain that contracture, floor, walls, ceiling, joinery, door, window, water supply, cupboard, drain, garbage storage, lighting, and etc. Should be easy to cleaning, keep good to repair and convenience for food holders to preparing and cooking. Another thing that is very important, try to avoid food contamination.
- **Equipment Hygiene**, Norman G. Marriott, Robert B. Gravani(2006) said that food contamination was occurs in every time especially in equipment. Food contaminations were occur although we do not use it and have high quality in material or have good hygiene design. Because the equipment can collect

microorganisms and infection from the air. Also from employees and material. That shown equipment is easy to make food contamination; food handler can reduce food contamination from equipment by recover hygiene design and have more effective cleaning.

- **Food Hygiene**, follow Health Department of Bangkok (2009) all kind of raw material that bring to cook; fresh food, meat, vegetables, daily product, dry food or canned food must have good quality (fresh, cleanliness and safety). Purchase from dependable supplier is necessary. Excluding raw material, flavoring or ingredient is also important such as soy sauce, fish sauce, vinegar, chili sauce and etc must be used in good quality and have ensure that is safety from government agency (Food and Drug Administration).
- **Personal Hygiene** (everyone who touch food), James Bailay (1977) state that food handler should be under regulation of food protection. Staff who illness or have infections which can make food contaminate must be report immediately. Then do not allow them to handling food until they are back to good health or given medical clearly. For people who apply job in kitchen should be having physical examination and assessment their clinical history. To make sure that at the time of recruitment, food handler are healthy. After hiring food handler must set training in food hygiene to them which giving by both inside and outside organization such as from office of the health authority and human resource department. Human Resource Department should pay more attention on it. For casual worker, HR should have comprehensive training and get them more detail about food safety in kitchen. The policy of food safety must be clear to all staffs to achieve high standards of hygiene and cleanliness follow the commitment of top management. The catering manager gives detail of all regulation that related to preparing and handling of food and set example for them. To have an effective in food safety, need to training every level of employee start from food handle until top manager.
- **Animal and insect vectors Hygiene**, Norman G. Marriott, Robert B. Gravani(2006) state that flies, cockroaches and rats which living and associated in food processing facilities including toilets, garbage and other grimes. They are transfer infection and grimes from diseased area to preparing,

cooking and serving area. Through their mouth, feet, and other part of their body. It can make food contamination, to stop this need to disposal and should be protected them to entry in food processing and food service areas. They should have regulation to control these pests.

Cook and owner need to learn in detail of each factor to find out the way to control them and management each factor to reduce contaminations in food. Other main factor that supports food sanitation to be success is attitude of food handler and food controller. Naraumon Veerapun and Pranee Thongkum (2007) state that the restaurant which have high quality and standardize, there are good attitude and knowledge toward food sanitation. To build attitude toward food sanitation, organization should participate in restaurant club or other that associated which have information guide and training about food sanitation or food safety. Government Agencies related to food sanitation should advice them about correct information and support to have standardize. For knowledge of food sanitation of owner and manager have large effect with standard of organization too. The problem to improvement standardize of restaurant according to food sanitation is cost and knowledge to improvement follow food sanitation guideline. Except that there are problem about place, environment, personal and authority.

Benefit of food sanitation is likely benefit of other food safety program and HACCP but food sanitation is more outstanding in control food contaminate. Jean C. Buzby, John A. Fox, Richard C. Ready, and Stephen R. Crutchfield (1998) said that microbial pathogens and pesticide residues in food made a financial burden to restaurant and organization which owner or manager can decrease it by reduce food risks. They find out three valuation technique to reduce cost by decrease food safety risk.

Another benefit is help consumer to make decision to choose food and service. There are a lot of factor that make choices about food product for consumers such as price, texture, smell, market place, convenience, quality, and food safety. They make decision to consumption with full information about food and product. Nowadays have a variety of food safety information problems which consumer used to make decision.

For example, infections of cow and pig will make food pathogens. Even though consumers do not see the pathogens in food, do not know the level of food borne-illness risk. It is not clearly but if food or product have information about their food safety such as process of product and the chemicals was used with product. Those make consumer ensure in quality of food.

Hazard Analysis Critical Control Point (HACCP)

Except the tools to measure and support quality of food, there are system to control quality and hygiene of food product which every organization about food should be following. In hospitality and food industry, HACCP is very important but less people known truly concept of HACCP. Someone never heard it before that make it is very difficult to apply to organization if they do not understand. In this paper will explain a little about meaning and concept of HACCP. HACCP came from Hazard Analysis and Critical Control Points food safety system. HACCP is all about forecast what could be wrong with food in a food operation from raw materials or ingredients are received until food is served or sold to customers. HACCP is a pro-active system that intends to protect, control and limit biological, chemical or physical hazards which may harm to the health of customers. HACCP is relating to analysis the foods and the process of operation in kitchen or organization. Most often likely in cause food-borne illness and establish effective process in place to control and monitor those hazards. This means looking at the operation in each process and find out which point that be risk, start from set up of menu and ingredients then how do they store and cook till sold or serve to customers.

According to The Implementation of HACCP System to The Emerald Hotel (Juthamas Brommanop, 2006). Food Safety Program based on the principle of HACCP will include a set of HACCP plans which must monitored and followed step by step every day which are supported by standard process and good hygiene practice. To make HACCP plans have an effective, in every process start from preparing food till serve are always the same. But for each business, food operation is different. Those

make food safety hazard will be different follow factors which have impact to HACCP plans such as:

- Menus
- Place
- Equipment
- Ingredients
- Processes of food operation (Purchase, Preparation, Store and Service)
- Skill of employee in food hygiene

The complexity of HACCP plans will be dependent on the complexity of the food operation. Must try to look at process of food operation first. For example, the food operation in a large hospital will be complex in HACCP plans more than food operation in a small restaurant. Before planning must know about seven principle concept of HACCP as the follows;

Principle 1 – Conduct a hazard analysis. The first principle check process of food operation in each step which hazard may occur, conduct a hazard analysis, and then find out effective measure to protect and control that hazard.

Principle 2 – Determine the critical control points (CCPs). After conduct a hazard analysis, the HACCP team needs to estimate which process are risk to be harm to safety. A Critical Control Point (CCP) is very important to protect, remove, and reduce a hazard. To get standard food will have one or more critical control points.

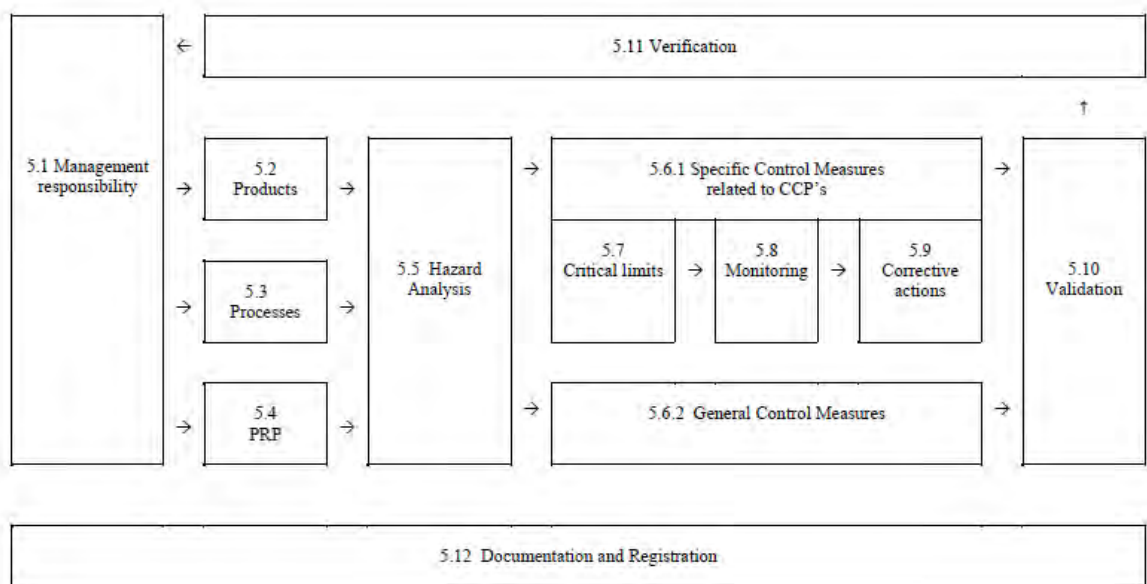
Principle 3 – Establish critical limit(s). In each critical control point must establish critical limits to settle standard within the measure working and guarantee that the hazard is controlled reduced or removed.

Principle 4 – Establish a system to monitor control of the CCP. Critical Control Points do not have an effective if do not establish a system to monitor control of the CCPs.

Principles 5 – Establish corrective actions. The HACCP team needs to follow when monitoring process met a critical limit has problem and establish up to date corrective actions to solve it.

Principle 6 – Establish procedures for verification to confirm that the HACCP system is working effective. Settle procedures for verification to ensure that the HACCP have an effective or need to be developed.

Principle 7 – Establish documentation concern all procedure and record keeping. In HACCP, record is very important in each process must be record and keep it up to date. Details of record depend on food operation.



The blueprint of a HACCP- based Food Safety System that Compiled by the National Board of Experts – HACCP The Netherlands, June 2006.

Before make decision to apply HACCP in organization must consider benefit and burdens / cost this can be happen with organization, Eunice Taylor said about Burdens of HACCP system in each point as the follow;

- Change, HACCP came with changing. The organization must prepare before apply food safety system. When put or change something new in organization must have some effect from worker and customers. Those needs time and motivation to

change. A lot people or worker do not changing, the organization must have the strong motivator to support.

- Expertise or skill of workers. For HACCP implementation, skill and knowledge of workers are very important because they need to done accurately in every steps. If organizations have lack of information and skill of HACCP, it cannot be success. Some organizations have training about health, hygiene and HACCP courses for accessory of HACCP system those useful for them when they have done follow operation steps. For HACCP has an effective, the worker must have knowledge of food microbiology and food chemistry which it needs to up to date information. And other they needs to have knowledge and good training in hazard analysis tools

- Time, in hospitality industry workers are always busy because customers come and get service all the time those are difficult to predict. They have less time to training in each knowledge and process of HACCP, may be it increase responsibility to them.

- Cost, it is very important factor that help organization make decision to apply and develop HACCP system. From Costs and Benefits of Compliance for HACCP Regulation in the Italian Meat and Dairy Sector (Donato Romano, Alessio Cavicchi, Benedetto Rocchi, Gianluca Stefani, 2004) Costs of HACCP depend on the nature of product (food). Costs will happen in each categories start with settle of system, design and development. Due to implementation, investment, manual and other cost in procedure. Government in some country, they set HACCP training program which organization in their country need to pay for training. In the small organization, they need some help from government or other agencies to support them about cost to apply HACCP system to their organization because it quite hard for them.

- Documentation, to be successful in HACCP system needs to operate document. It is effective communication in organization that supports HACCP system. During food safety system in each process need to record keeping and use it to integrate basic rule of organization. In the other hand, too much of document in organization, those

made complex and confuse. The organization should carefully to operate document in each process to be simple, easy to understand, and clearly.

- Validation, after analyze critical control point and made decision about how to control or manage in effectively. HACCP team needs to validation or check their system. It is good system or need to develop which base on the nature and process of product (food and service) HACCP plan must be developed and maintained continually in both equipment, and process. To make sure that food operation is safety for customer. Not only worker who have responsibility in HACCP plan but manager or owner need to see each process by themselves to ensure the process running correctly follow plan. They must double checking for accuracy of HACCP system.

- Supplier vetting, many organization used a lot of time and money to find out safety food supplier. Especially supplier who has certificate for guarantee their product but there are risks if they do not have knowledge or experienced in food sciences and statistic.

Above the burden organization need to consider about benefit, there are a lot of benefits of HACCP implementation in hospitality industry. First confidence, organization which put HACCP in their food operation they will confidence in their product (food), customer as well. Especially in a small organization that does not has international standard or high technology, HACCP will help people have more confidence in food and service. Second help organization reduce cost and waste because in each process have record and analyze. Third help organization focus in each process to get large benefit to organization. The error of each process will decrease and have more effective because workers will have more careful in every step. They will acknowledge which is important for the standard of food safety system that needs to control or develop. Forth, to solve the problem that was happening in HACCP system. All workers in each process must help each other then link all process together those made team building in organization. The organization will be stronger than the past, may be have powerful to action in business operation. Fifth, organization was developed in both process of product and culture of organizations. To be successful in HACCP system, the organization needs to be changed to solve the

problem or points which harmful to customers. After development, the organizations will have up to date management skills and techniques those focus on food safety. Finally, all of the above benefit made the organization has the opportunities to get more customer and well known. Effective of HACCP plan will make products (food) have high quality. Those will made customers satisfaction and words of mouth which is strong marketing. Because most of people believe in experience. Now a day HACCP is well known in effective food safety system, in many countries have legal protection for customer by a doption principle of HACCP in customer law in cause food borne disease?

Hazard Analysis Critical Control Point (HACCP) in Thailand

Nowadays, Thailand is rapid changed in every aspect during the developing country. Especially, developing quality life of people in country to get better life for them. To control food quality prior distribution to consumers, there are government agencies that have responsibility to inspection food safety of manufacturers and exporters. It is Bureau of Quality and Safety Food Department of Medical Science, in the Ministry of Public Health. They have responsibility to check food quality more than 60 years till now in the same time they try to develop their operation and system to serve up-to-date new technology which according current situation and international standard. They support food production of Thailand to get more potentiality in production process and technology. They brought international standard in food safety such as GMP and HACCP which are very important at the present because several countries around the world use HACCP to measure the quality of food.

From the www.foodnetworksolution.com(2011) , the EU (European country) launch the regulation that food producers who would like to distribution food in European countries group must be put HACCP system in their food operation on 1991 and in the end of 1997 the United State also launch this regulation for import and export seafood must apply HACCP in their operation. It is mean countries which export seafood to U.S.A. must be use HACCP system including Thailand. All

institutions that have direct responsibility concern with export seafood try to prepare exporter to put HACCP system in their food operation to support trade partner. They develop the HACCP in Thailand to comply with demand of trade partner. The agencies of government which have responsibility in this part are Ministry of Agriculture, Ministry of Public Health, and Ministry of Industry. They have jointly and support each other in academic and public knowledge about HACCP system for student to support food industry in the future. In 1997, Food and Drug Administration of The Ministry of Public Health has issued notification about development and classify level of standard production of industry by using Hazard Analysis Critical Control Point as a guide to develop locally product food, protect the customer and support the export that production up in domestic. After that The Ministry of Public Health issued notification about standard of industry about Hazard Analysis Critical Control Point in food production.

Khun Ubonwan, the staff of Bureau of Quality and Safety of Food Department of Medical Science said that in the first period, HACCP was applied in food product industry only but after Tsunami was happen on 2004 in Phuket area. Tsunami was the worst natural disaster to ever strike Thailand, causing loss of life as well as major damage to property, the environment and the economy. The severe impact on the natural environment in turn had serious consequences on the fishing and tourism industries and, therefore, thousands of families' livelihoods. There are a lot of hotel and resort in Phuket area which was damaged by Tsunami and the hotel would like to refurbish their hotel. But it is difficult to make customer confident in quality and food safety. The hotel would like the government to support this problem, The Bureau of Quality and Safety of Food Department of Medical Science was give them a hand to help them by use HACCP system to help them reach the standard quality in food operation and increase reliability for customer. For hotel industry, HACCP is volunteer system. The government do not force hotel to apply HACCP but try to public information and benefit of applying. The hotel where would like to get certificate of HACCP can contract the Ministry to inspection their operation. There are expert team to inspect and advice. In Thai hotel industry, the HACCP is not popular. Most of hotels that certified HACCP are in southern part of Thailand, especially in

Phuket and Krabi area. Both areas have large number of hotel and resort which HACCP is very necessary for them to reach the food safety standard.

Before the agent comes to inspection HACCP system in the hotel and certified, the hotel must be pass Good Manufacturing Practices (GMP) in level A or B. GMP is good rules and good procedures in food production which is a basic requirement in the environment of food operation. The food manufacturers or food handler need to check the hygiene of food operation in each process. The GMP was applied and defined in the Bureau of Quality and Safety of Food Department of Medical Science. They have the project to develop food operation in hotel industry follow GMP on 2006. This project support developing system to control quality of food operation according to international standard. The food operation need to past standards of GMP. For example project at Koh Samui area, Bureau of Quality and Safety of Food Department of Medical Science along with Health Science Center of Surachthani province. This project starts operation on July 2006 to April 2007. There are seven hotels volunteer to participate in this project and all of them through the assessment their food operation follow the GMP. The name of the hotel as the follow;

- 1). Ban Laem Sai Beach Resort & Spa
- 2). Imperial Hotels and Resorts Samui
- 3). Six Senses Hideaway Samui (Formerly Sila Evason Hideaway & Spa at Samui)
- 4). First Bungalow Beach Resort
- 5). Samui Palm Beach Resort & Royal Wing
- 6). Baan Tong Sai Bay
- 7). Nora Beach Resort and Spa

All of above hotel are pass inspection follow the GMP system and got the certificate to guarantee that their manage food safety along with GMP system. After that they also pass the HACCP system.

Why is HACCP important for Thailand?

Juthamas Brommanop (2006) said that the HACCP system will not get benefit for hotel only but also get benefit to overall of hotel industry in Thailand too. It can upgrade the standard of hotel in Thailand to be international standard. It can be promotes the education and development of hotel personnel, and protect both hotels and consumer. Those can be explain that why the hotel must be spend so much money and effort to enact a program that the customers never see. It is nothing important more than having systematic process to make sure that food safety for all stakeholders. To understanding that to be a five star hotel, implement HACCP system is a requirement. However, simple is that sufficient food and safety system consisting of temperature control of food processing, kitchen staff hygiene, food contamination, proper food purchasing procedures and inspections, pest control, theoretical and practical training for kitchen staff while stringent monitoring and recording, verification, review and maintenance are necessary to be fulfilled. The hotel should think about gain competitive advantage and gathering the market share from individual market that HACCP system is one of the weapons. Then the hotel will be in a position of market leader and other will follow. Both international and domestic.

CHAPTER 3

METHODOLOGY

This chapter is about the research methodology. It will represent why the researcher used this method and why it is being proposed to be objective in this research. It will define the overall of research process and how the research has been operated. The first part of the chapter is research objectives, then explaining the research instrument and sampling method. Lastly, of this chapter is a data analysis technique.

3.1 Research Objectives

- I. To study the general condition of 4 stars hotel, do they apply HACCP to their food operation?
- II. To study benefit of HACCP System to food operation, how can prevent and solve problem of food safety?
- III. To study that 4 stars hotel in Bangkok are ready for HACCP system.

3.2 Research instrument

This research will used both interview and questionnaire to get the in-depth information of the research topic. The research was operated in year 2013. The topic of questionnaire can be separate in five parts;

The first part is demographic of research to gather general information of staffs to classify them by kitchen, age, education, and sex. The information of this part will be used to find out the relation with knowledge and attitude about food safety and HACCP in each factor.

The second part is knowledge and understanding in food safety system (HACCP and Food sanitation). This part can explore about the knowledge of staffs and are they understand concept of HACCP or food safety of their hotel.

The third part is attitude about food safety and hygiene follow HACCP and Food sanitation. This part can find out the attitude of staffs in food safety and hygiene which the staffs need to practice during food process in everyday.

The fourth part is applying HACCP and food sanitation in hotel. To find out the operation staffs level knows that there are the HACCP and food sanitation in their food operation or not.

The last part is outcome of using HACCP and Food sanitation, to find out that the staffs know and understanding the benefit of applying HACCP and food sanitation to their food operation. Are they following the concept or process of HACCP and food safety?

From all of five parts, the researcher can be defining the knowledge and attitude of staffs which both are very important to HACCP and food safety.

The semi-structured interview question will be discussed with Head Level only to determine attitude, knowledge of food safety, how they apply HACCP to food operation, do they meet the standard of food safety. Then give an overview to conclusion.

3.3 Sampling Method

This research has the objective to find out how well the hotel in 4 stars level manages Hazard Analysis Critical Control Point (HACCP) in food operation. Hence, the qualitative and quantitative methods are being proposed. The semi-structure interview and questionnaire are being used to gather the information to evaluate the research objectives. For the questionnaire, the researcher has explains to respondents before distribution to make them understand the question. An interview, the researcher also explains the objective to the respondents before interview. The researcher have interview by person-to-person interaction and similar to a face-to-face questionnaire which easy to get information in deeply detail. This can make respondent feel free or easy to expose some information from their own opinion to get the truth result.

The target population for this research were respondent from Grand Mercure Fortune Bangkok which have very good standard in the same level. The staffs in the food and beverage operation also have the same standard practice when preparing and cooking food. The researcher conducts the respondent in two groups. First group included all position of staffs in the operation level, this group the self-administered questionnaire was given to the respondents to answer the question. Second group include the head of each kitchen and executive chef who is the top management of kitchen in this group the semi-interview will be used.

Accordingly, there were 38 respondents from operation level were taking part in this research process. The question was distribution in every kitchen of hotel but everyone have responsibility to do follow their schedule and some of them cannot read. Those are very difficult for them to answer the question of questionnaire. There are 50 answers of the question which need time to select the appropriate with them.

On the other hand for the personal interview, all interviews were given time according to their convenience. Altogether, there were 5 participants who were willing to share their time, knowledge and experience about food operation in their hotel.

3.4 Data Analysis

Data analysis is very important process of the research because it can help researcher answer the objective of the research. It provides the problem solving process which came from the data material that gathers from the target population. Useful information can be extracted from it.

First of all, the researcher needs to collected data from questionnaire. The data content collection will be analyzed and summarized to settle the question for an interview. In part of questionnaire, the data will be using descriptive statistic and one way ANOVA technique to find out the relation between kitchens that they work about knowledge in HACCP, attitude in food safety and outcome of food safety system.

Lastly, the researcher needs to collect data from interview discussion with respondent. After collecting data, the researcher will be transcribed the word from the recorder on the paper to make sure and protect the word missing because it will make the result uncertain. To find out the conclusion for the research objective.



CHAPTER 4

RESULT AND DISCUSSIONS

This chapter presents and discusses the research finding. Details of the data came from the questionnaires which separate into five parts. Tables and figures are draw to display the finding with discussion.

4.1 Qualitative Data (Questionnaire)

4.1.1 Overview of the sample

The following demographic and psychographics of staffs in food operation level complied from 38 respondents. This study is done in Grand Mercure Fortune, Bangkok.

Table 1: Social demographic of questionnaire respondents (N=38)

Demographic Characteristic	Frequency	Percent
Gender		
Female	13	34.2
Male	25	65.8
Total	38	100.0
Age		
15 – 25 year	6	15.8
26 – 35 year	10	26.3
36 – 45 year	10	26.3
46 – 55 year	11	28.9
56 – 60 year	1	2.6
Total	38	100.0

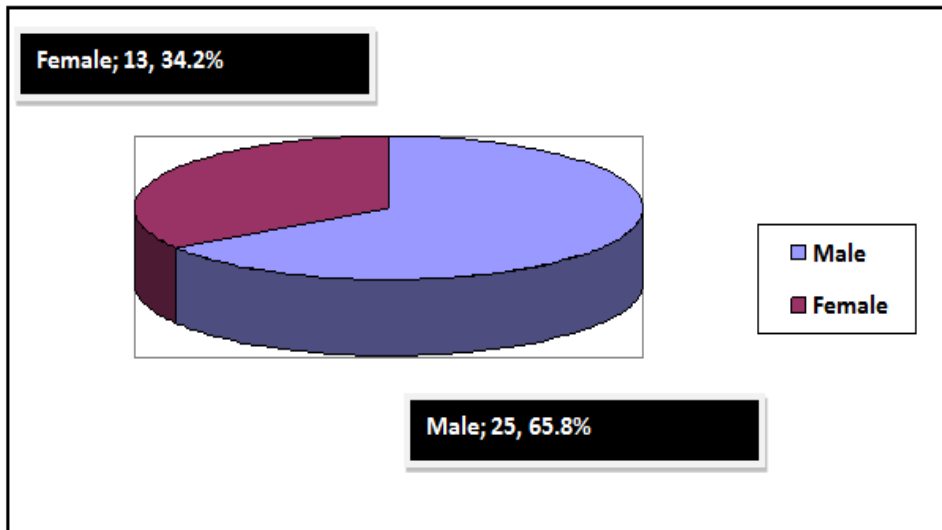
Table 1 : Continue

Demographic Characteristic	Frequency	Percent
Education		
primary school	6	15.8
high school	10	26.3
diploma	4	10.5
bachelor degree	17	44.7
higher bachelor degree	1	2.6
Total	38	100.0
Kitchen		
coffee shop	6	15.8
bakery	13	34.2
main	1	2.6
chinese	6	15.8
cold	4	10.5
thai	4	10.5
japanese	4	10.5
Total	38	100.0

Gender

There are altogether 38 respondents from every kitchen of Grand Mercure Fortune Bangkok answer the question. As it shown in graph below, 13 out of 38 (representing 34.2%) is female. The rest which composes of 65.8% (25 respondents) of the samples is male.

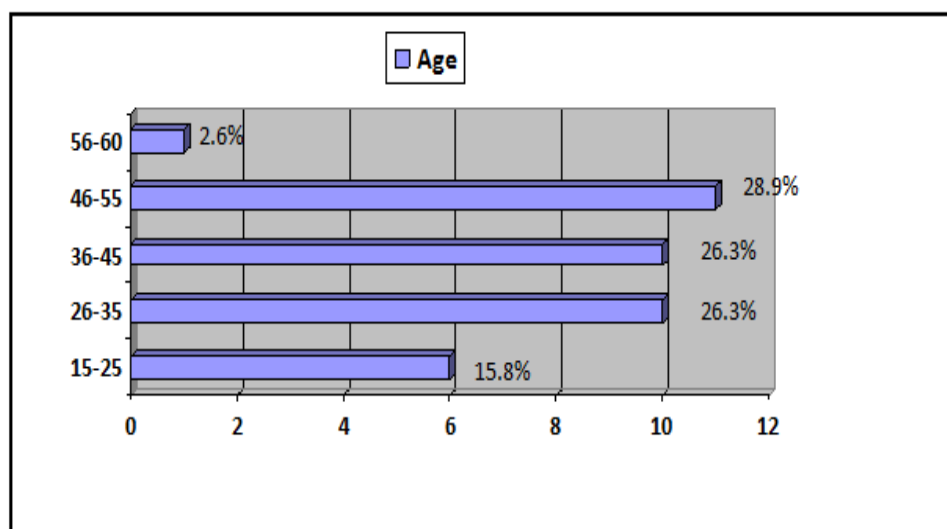
Graph 1: Overview of Gender



Age

From the table shows overview sample by age, there are variety age of the staffs who respondents the questionnaire. Mostly in age of 46 to 55 years are 28.9% follow with 26 to 35 years and 36 to 45 years are 26.3% in each category. Then in age of 15 to 25 years are 15.8%, lastly in age of 55 to 60 years is only 1 person.

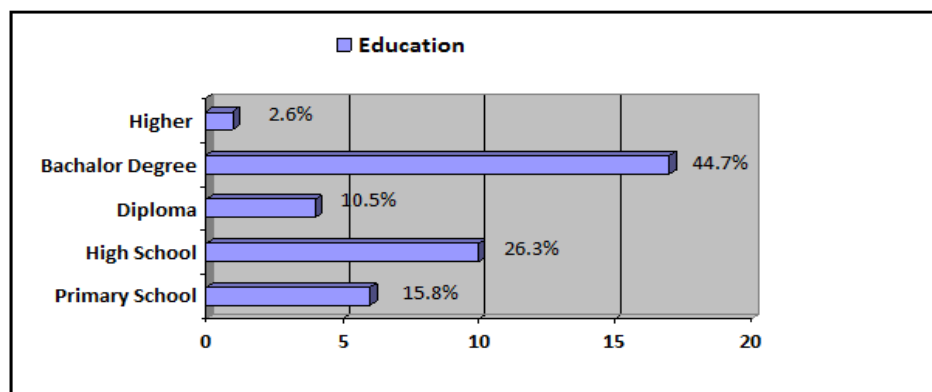
Graph 2: Overview of Age



Education

The graph shows the overview result of staff education level, the less number of staff's education level is higher bachelor degree is 2.6%, following bachelor degree is 44.7%, and under bachelor degree is 52.6% (Including primary school, high school, and diploma).

Graph 3: Overview of Education



Kitchen

Most of respondents are staffs who work in Bakery Kitchen, representing 34.2% of the samples. It is follow by Coffee Shop and Chinese Kitchen (representing 15.8%) in each category. Cold Kitchen, Thai Kitchen and Japanese Kitchen are 10.5% in each category. Lastly is Main Kitchen, there are only 1 person (representing 2.6%)

Graph 4: Overview of Kitchen

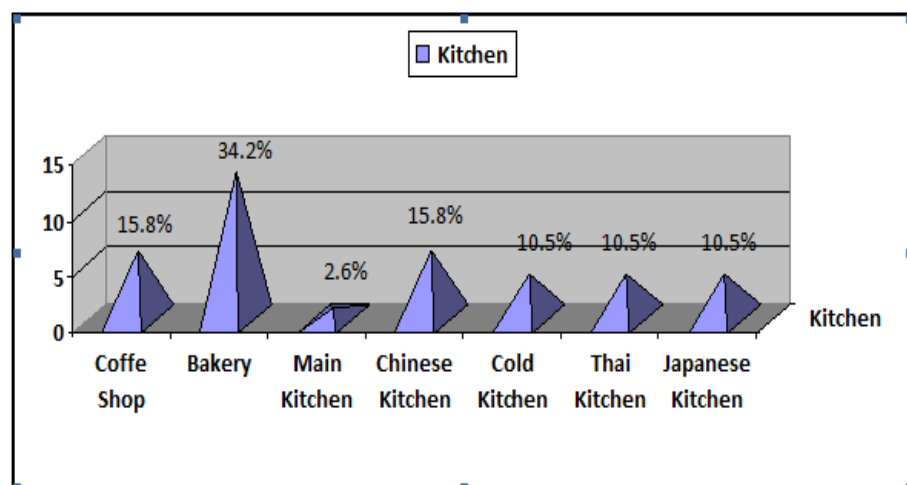


Table 2: Overview of sample by knowledge in food safety system

	Not Choose		Choose		Total
HACCP	27	71.1%	11	28.9%	38
Food Sanitation	23	60.5%	15	39.5%	38
ISO	14	36.8%	24	63.2%	38
5S.	3	7.9%	35	92.1%	38
GMP	38	100.0%	-	-	38

Knowledge in food safety system

Most of respondents know 5S, representing 92.1% (35 people) of sample. It is follow by ISO, representing 63.2% (24 people). Food Sanitation is the third, representing 39.5% (15 people). And HACCP is representing 28.9% (11 people). Lastly, nobody knows GMP.

4.1.2 Questionnaire Result

From the questionnaire result, it can be categorized in 4 groups from the following: As the knowledge of food safety system (Food sanitation and HACCP), attitude about food safety and hygiene follow HACCP and Food sanitation, the operation staffs level aware that there are the HACCP and food sanitation in their food operation, and outcome of using HACCP and Food sanitation

First Group; The knowledge of food safety system (Food sanitation and HACCP).

Table 3: Comparing the knowledge of staffs do they know in HACCP and Food Sanitation in their hotel

	HACCP		Food Sanitation	
		%		%
Yes	32	84.2	34	89.5
Not sure	6	15.8	4	10.5
Total	38	100.0	38	100.0

Acknowledge about applying HACCP and Food Sanitation

There are 32 respondents (84%) know that hotel applying HACCP in food operation and 6 respondents (15.8%) do not sure. There are 34 respondents know that hotel applying Food sanitation in food operation and 4 respondents (10.5%) do not sure. Comparing acknowledge about applying both are slightly different.

Graph 6: Comparing the knowledge of staffs do they know in HACCP and Food Sanitation in their hotel

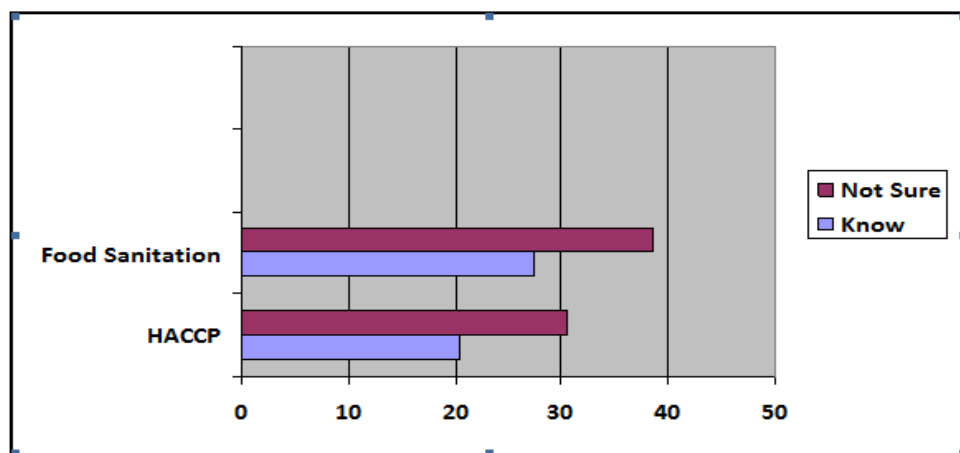


Table 4: Overview of sample by question “Do you know which the critical point which needs to control is?”

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid yes	33	86.8	86.8	86.8
almost	3	7.9	7.9	94.7
almost not	2	5.3	5.3	100.0
Total	38	100.0	100.0	

The critical point is very important in HACCP system; the staffs need to know which point need to monitoring and controlling. There are 33 respondents (86.8%) know the critical point in food operation. 3 respondents (7.9%) almost know and 2 respondents (5.3%) almost not know.

Table 5: Overview of sample by question “To decrease food contamination, what should we do first before preparing, cooking and touch food follow principle of food sanitation?”

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	wash hand	35	92.1	94.6	94.6
	wearing rubber glove or plastic glove	2	5.3	5.4	100.0
	Total	37	97.4	100.0	
Missing	9	1	2.6		
Total		38	100.0		

From the table above show that 92% of the respondents wash hand before preparing, cooking, and touch food follow principle of food sanitation to decreased food contaminate. This is the basic standard hygiene which staffs in kitchen and food handler need to follow. There are 5.3% of the respondents, wearing rubber glove or plastic glove and follow by 2.6% do not answer the question.

Second Group; Attitude about food safety and hygiene follow HACCP and Food sanitation.

Table 6: Comparing Attitude and kitchen

ANOVA

I think food safety is important for hotel?

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.573	6	.262	1.015	.434
Within Groups	8.006	31	.258		
Total	9.579	37			

* Statistically significant at the .05 level.

Hypothesis 1

H0 The staffs in different kitchen have the same attitude about applying HACCP (ISO) in food operation make an effective in food safety.

H1 The staffs in different kitchen have different attitude about applying HACCP (ISO) in food operation make an effective in food safety.

The result of analysis comparing difference in attitude of staffs about applying HACCP in food operation make an effective in food safety separate follows the kitchen. From the table above show that the staffs in different kitchens have the same attitude about applying HACCP in food operation in statistically significant at the 0.05 level. It can be seem from Sig is more than 0.05.

Table 7: Comparing Attitude and education

ANOVA

I think food safety is important for hotel?

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.831	4	.208	.784	.544
Within Groups	8.748	33	.265		
Total	9.579	37			

* Statistically significant at the .05 level.

Hypothesis 2

H0 The staffs in different education level have the same attitude about applying HACCP (ISO) in food operation make an effective in food safety.

H1 The staffs in different education level have the different attitude about applying HACCP (ISO) in food operation make an effective in food safety.

The result of analysis comparing difference in attitude of staffs about applying HACCP in food operation make an effective in food safety separate follows the education level. From the table above show that the staffs in different education level have the same attitude about applying HACCP in food operation in statistically significant at the 0.05 level. It can be seem from Sig is more than 0.05

Table 8 : Comparing Attitude and age

ANOVA

I think food safety is important for hotel?

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.170	4	.542	2.416	.068
Within Groups	7.409	33	.225		
Total	9.579	37			

* Statistically significant at the .05 level.

Hypothesis 3

H0 The staffs in different age have the same attitude about applying HACCP (ISO) in food operation make an effective in food safety.

H1 The staffs in different age have the different attitude about applying HACCP (ISO) in food operation make an effective in food safety.

The result of analysis comparing difference in attitude of staffs about applying HACCP in food operation make an effective in food safety separate follows group of age. From the table above show that the staffs in different age have the same attitude about applying HACCP in food operation in statistically significant at the 0.05 level. It can be seem from Sig is more than 0.05

Third Group; The operation staffs level knows that there are the HACCP and food sanitation in their food operation.

Table 9: Overview of sample by question “Does your hotel have team to check quality and food safety in each process of food operation?”

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rarely	3	7.9	7.9	7.9
	Often	28	73.7	73.7	81.6
	Always	7	18.4	18.4	100.0
	Total	38	100.0	100.0	

There are 28 respondents (73%) choose that the quality control team often check in each process of food operation which hazards may be occur. 7 respondents (18.4%) choose always check and 3 respondents (7.9%) choose rarely.

Table 10: Overview of sample by question “Does hotel has documentation concerns all procedure and record keeping in every process of food operation?”

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	1	2.6	2.6	2.6
	Often	16	42.1	42.1	44.7
	Always	21	55.3	55.3	100.0
	Total	38	100.0	100.0	

There are 21 respondents (55.3%) answer that always have document concerns all procedure and record keeping in every process of food operation. 16 respondents (42.1) answer often have and 1 respondent (2.6%) answer never have.

Forth Group; outcome of using HACCP and Food sanitation.

Table 11: Overview of sample by question “Did foods have high quality and safety in every dish?”

	Missing		Strongly Disagree		Disagree		Agree		Strongly Agree	
		%		%		%		%		%
HACCP	2	5.3	-	-	-	-	29	76.3	7	18.4
Food Sanitation	2	5.3	-	-	-	-	22	57.9	14	36.8
HACCP & Food Sanitation	2	5.3	-	-	-	-	23	60.5	13	34.2

From the table above show the outcome of using HACCP and Food sanitation that the hotel has good quality of food in every dish. There is not people choose disagree and strongly agree that shown all staff have confident in both food safety system. More than 50% of staffs choose agree that apply HACCP, Food Sanitation and both make every dish have high quality.

Table 12: Overview of sample by question “Did food handlers, head of kitchen and top manager have reliability that their food will be safety for customer?”

	Missing		Strongly Disagree		Disagree		Agree		Strongly Agree	
		%		%		%		%		%
HACCP	2	5.3	-	-	-	-	22	57.9	14	36.8
Food Sanitation	2	5.3	-	-	-	-	20	52.6	16	42.1
HACCP & Food Sanitation	2	5.3	-	-	-	-	20	52.6	16	42.1

This table shows that the top manager and the head of kitchen have reliability in food from the food operation of hotel, there is not people choose disagree and strongly agree that shown all staff include the head of kitchen and top manager of hotel have reliability in both food safety system. More than 50% of staffs choose agree in each food safety system.

Table 13: Overview of sample by question “Did hotel has reduce food contaminate and food borne?”

	Missing		Strongly Disagree		Disagree		Agree		Strongly Agree	
		%		%		%		%		%
HACCP	2	5.3	-	-	1	2.6	26	68.4	9	23.7
Food Sanitation	2	5.3	-	-	-	-	20	52.6	16	42.1
HACCP & Food Sanitation	2	5.3	1	2.6	-	-	19	50.0	16	42.1

The table above shows that applying food safety system help the hotel reduce food contaminate and food borne in their operation, there is one person or 2.6% choose disagree in HACCP system and strongly disagree in applying both HACCP & Food Sanitation but more than 50% of staff still choose agree in each food safety system.

Table 14: Overview of sample by question “Did hotel have reduced cost in kitchen such as raw material?”

	Missing		Strongly Disagree		Disagree		Agree		Strongly Agree	
		%		%		%		%		%
HACCP	2	5.3	-	-	-	-	23	60.5	13	34.2
Food Sanitation	2	5.3	-	-	-	-	21	55.3	14	36.8
HACCP & Food Sanitation	2	5.3	-	-	-	-	19	50.0	17	44.7

From this table shows that applying the food safety system help hotel reduce cost in kitchen, there is not people choose disagree and strongly disagree that shown all staffs in kitchen agree this point, more than 50% of staffs choose agree in each food safety system.

Table 15: Overview of sample by question “Did staffs that associated with food have knowledge about HACCP and follows strictly?”

	Missing		Strongly Disagree		Disagree		Agree		Strongly Agree	
		%		%		%		%		%
HACCP	2	5.3	-	-	-	-	23	60.5	13	34.2
Food Sanitation	3	7.9	-	-	-	-	25	65.8	10	26.3
HACCP & Food Sanitation	2	5.3	1	2.6	-	-	19	50.0	17	44.7

The table above show staff that associated with food has knowledge about HACCP and follows strictly; there is one person or 2.6% choose strongly disagree in applying both HACCP & Food Sanitation but more than 50% still choose agree in each food safety system.

Table 16: Comparing outcome and kitchen

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
HACCP	Between Groups	1.331	6	.222	1.494	.215
	Within Groups	4.308	29	.149		
	Total	5.639	35			
Food Sanitation	Between Groups	2.145	6	.358	1.618	.178
	Within Groups	6.410	29	.221		
	Total	8.556	35			
HACCP & Food Sanitation	Between Groups	1.562	6	.260	1.120	.376
	Within Groups	6.744	29	.233		
	Total	8.306	35			

* Statistically significant at the .05 level.

Hypothesis 4

H0 The different kitchens have the same outcome from food safety system.

H1 The different kitchens have the different outcome from food safety system.

The result of analysis comparing difference in outcome of the food safety system separate follows the kitchen. From the table show that the different kitchen have no difference in the outcome from food safety system in statistically significant at the 0.05 level. The result of applying HACCP, Food Sanitation, and both HACCP & Food Sanitation is the same. It can be seen from Sig of each choices are more than 0.05.

4.1.3 Summary the result of the data

The first group of questionnaire is about the knowledge of food safety system (Food sanitation and HACCP). The results of the data show that most of respondents have good knowledge about Food Sanitation and HACCP, it can be seen from the result of each question. More than 80% of respondents know there are Food Sanitation and HACCP in their food operation. In HACCP system, knowing the critical point is necessary to monitor and control. Most of respondent about 86% are know the critical point which may be occur in their food operation. In addition, the important basic principle of the Food Sanitation is wash hand before preparing and cooking to decrease food contamination. There are 92% of respondents know this point and always follow. Those shown the respondents have good basic knowledge about food safety system.

The second group is about the attitude of staffs in food safety and hygiene follow HACCP and Food sanitation. The results of the data show that attitude of staff about food safety and hygiene in each kitchen when separate by kitchen, education level, and group of age are the same. That show all of respondents have good attitude in the same way and they think the food safety system is important for their food operation. (Most of answers of respondents are in good attitude about food safety and hygiene)

The third group of questionnaire is about the operation staffs level knows that there are the HACCP and food sanitation in their food operation. Preparing document and acknowledge that there are quality control team always come to check their quality, it can be explained that respondents know there are HACCP and Food Sanitation in their food operation to follow. More than 80% of respondents select often and always in both question about document and quality control team.

The last group of questionnaire is about outcome of using HACCP and Food sanitation in each kitchen. Most of answers of this part are agree that applying food safety system (HACCP, Food Sanitation, and HACCP & Food Sanitation) in their food operation help to reduce food contaminate, food born, and cost in kitchen. From the result of one way ANOVA technique shows that each kitchen has the same outcome of applying food safety system. That can be explained that every kitchen have the same standard to practice and follow. The staff of each kitchen has good communication from head of each kitchen because the hotel has less of training about food safety and hygiene.

4.2 Qualitative Data (Interview)

4.2.1 Interview Result

Current situation in food operation

Finding 1: Grand Mercure Fortune has good s tandard in food operation in each process follow the HACCP, there is lack of complaint about food quality or food borne illness from their customer.

Starting from menu design process, the complexity of food safety system or HACCP. Menu design must be depend on the head of each kitchen and need commendation or decision from the Executive Chef to launch every menu. The factor which head of each kitchen use to make decision to launch menu as the follow;

- The head of coffee shop and main kitchen said that “The variety raw material and food in every day such as meat will use in several not use only beef or pork.”
- The head of coffee shop and bakery said that “Using raw material in seasonal such as mango, passion fruit but excepted durian. Hotel does not allow bringing durian into hotel.”
- The head of cold kitchen said that “Using the remain material in storage that still good quality to cook before use new one. To prevent wasting raw materials and emphasis on freshness of vegetables and fruits.”
- The head of Japanese said that “Design from demand of customer in each period, how about their trend and behavior. For banquet will set menu follow function from sales department.”

To select raw material and ingredient to cooking in each menu, all of respondents said that “the hotel will consider about the quality of food first follow by price.” For example taste, fresh, and hygiene. Head of bakery kitchen explain more about the process to select raw material that “The process to purchase raw material and ingredient in hotel, supplier will offer their product to Purchasing Department (check basic quality of product and price) then they will transfer product to kitchen for test. The head of kitchen will make decision to order after that when met the problem about quality of product or raw material, the kitchen will return the product to supplier.” Head of cold kitchen said that “The hotel has standard to select raw material and ingredient if the product do not meet that standard, the hotel do not allow using and returning product immediately.” Head of main kitchen said “Some of raw materials need to import from other countries which staff must be check carefully because it is high cost for hotel.”

In receivable process, Head of cold kitchen said that “Purchasing Department will have responsibility to check product from supplier that is according to their contract or agreement between hotel and supplier or not? Then must have double check from staff in kitchen, they will check very carefully before move to kitchen.”

Storage is very important process in food operation, lot of raw material do not use immediately. Head of cold kitchen said that “before storage must be washing and clean raw material especially vegetable and fruit. For fresh vegetable will wash in clean water in 3 times to make sure that is not contamination from soil and other.” All respondents said that “In storing process, the temperature is very important because it is control quality of food.” The difference raw material will storage in difference temperatures such as meat and fruit cannot storage in the same place; meat will be damaged because meat must be storage in lower temperature. Head of main kitchen said that “the hotel has document to check the temperature of refrigerator by staffs of each kitchen and engineering.” In area of refrigerator, there are document about temperature that appropriate with each material.

Thawing and preparing, some raw material or ingredient need to freeze to keep or maintain quality and nutritional value of food. As the head of cold kitchen said that “for frozen raw material, need to plain in advance because need time to thawing. Open water flow through frozen raw material can help faster but waste the water supply. And after thawing need to wash raw material again.” To preparing ingredient, first must be washing hand follow principle of food sanitation before start working. All respondents said that “the skillfulness is necessary for preparing because there are variety styles of chopped to decorate dish and make food look better. After preparing, staff must clean on table by themselves but for the floor, equipment, and garbage must be manage by steward.” All staffs must be primary cleaning by themselves before and steward will be deep cleaning after they finish work.

The head of coffee shop kitchen said that “cooking is depending on kind of food and skillfulness of food handler. During cooking need to consider about food safety. The way we cook our food is as important as the way we prepare and store it.” It means cooking is a common cause of food poisoning. Cross contamination from raw

to cooked foods, such as from hands or utensils, can also cause food poisoning. Most foods, especially meat, poultry, fish and eggs should be cooked thoroughly to kill most types of food poisoning bacteria.

After cooking, food will serve directly to guest in case A la cart menu in each restaurant. This is minimum risk when compare with hot hold and cold hold because customer will eat immediately. The opportunities that contaminate occur is not much but still be careful during cooking and preparing. As follow respondents said that “must pay attention and concentrate when cooking, the problem can be occur all the time both staff and customer.” Hot hold and cold hold must be careful about temperature which main factor waste food. The problems usually occur in this process and high risk of food safety. The food will be contaminated from food handler or equipment to storage before serve to customer. As the head of main kitchen said that “the weather is critical point to waste food, nowadays the weather is very hot which should be more careful before serve to customer.”

All respondents said that “there are 4 quality control team from different part as the follow; C.P Group, Accor Chain, Internal Quality Audit, and ISO Quality System Committee.” C.P Group, they will send quality control team to check food quality every three month. Accor Chain, there are audit team to check the quality of food and food operation that the hotel meet the standard of International Accor Chain or not. They come and check every three months. Internal Quality Audit, the head department of hotel will check quality of other department in every three months. For example, Financial will check the operation of Kitchen. They do not allow checking their own department to accuracy and justice. They will check all of process in kitchen and document about food quality and expiry date of ingredient. Lastly, ISO Quality System Committee, they will come to check and support hotel about standard quality. They will come twice a year.

From all of process above, hotel applying the principle of HACCP to make an effective food safety in each process.

Principle 1 – Conduct a hazard analysis, in ISO system the hotel needs to plan and define the goal of food operation to meet demand of customer follow the quality policy. The hotel will list all process and hazard, starts from design menu, after that the hotel will conduct in each step that hazard will occur and do not safety for customer such as head of cold kitchen said that “we pay more attention in fresh of vegetable and fruit. The main menu is salad which main raw material is vegetables. Start from order raw material from reliably supplier to get standard quality raw material and storage in appropriate temperature which help to reduce waste raw material. In preparing process is very important because food may be contaminated and small piece waste vegetables can be escape, although wash 3 times in clean water.” During cooking and preparing need to consider about hygiene and keep place and equipment clean because it can collect bacteria that can be contaminate into food. Check equipment and dish before put some food, it must be clean to protect food contaminate.

Principle 2 – Determine the critical control points (CCPs). All respondents said that “the main risks of food operation in Grand Mercure Fortune are weather and temperature.” These can make big problem to hotel such as for main kitchen, the head of main kitchen said that “there are variety kinds of meat in refrigerator of main kitchen. If the refrigerator is not working when all staff of kitchen come back home, the meat will be waste which effect to cost of Food. The engineers have responsibility to check refrigerator follow the schedule of each refrigerator every day. Especially, after work of staff in kitchen the engineer will check. When they meet the problem they will told other kitchen help to move raw material.” Another problem about weather is faster waste food and raw material.

Principle 3 – Establish critical limit(s). The critical limits must be measures in Grand Mercure Fortune are temperature, time, physical dimension (thickness/ weight of food item), and water activity. For example, the head of Japanese kitchen said that “storage different raw material must different temperature and cooking food must use the appropriate temperature too.”

Principle 4 – Establish a system to monitor control of the CCP. All staffs in kitchen have responsibility in basic monitoring such as the temperature of refrigerator, the cleanness of equipment and place to cooking and preparing, and the head of kitchen will cover them again such as they way they work and personal hygiene. Accepted that there are quality control and audit from ISO, C.P. group, Accor chain, and internal hotel to monitoring every 3 months.

Principles 5 – Establish corrective actions, the staff of cold kitchen said that “there are Corrective Action request (CAR)”, the request to modify and record to protect problem about quality system. When the staffs or head of kitchen meet the problem in food operation about the quality, they find out the way to solve and prevent the problem happen again and record each process into document and send to executive chef to acknowledge and keep record.

Principle 6 – Establish procedures for verification to confirm that the HACCP system is working effective. Grand Mercure Fortune applying ISO 9001 into their operation, there is team to check both document and process in food operation according to their international standard of quality. In addition the hotel have settle goal following ISO (Key Performance indicator) such as reduce number of complaint from restaurant customer about quality and taste of food, increase food revenue, reduce equipment damage, and cleanness of each kitchens. The hotel will check are they reach their goal in every month and try to solve if do not success by discuss and change their plan to appropriate with their goal.

Principle 7 – Establish documentation concern all procedure and record keeping. All respondents said that “there are document in each process of food operation, both for check and remind staff to follow.” The hotel needs to prepare document to ISO Quality Systems Committee, Audit from Accor Chain, Audit of C.P. Group, and Internal Quality Audit. In each group will check the food operation every 3 months. Those show the staffs in kitchen need to continually preparing document to support each group. For ISO Quality Systems Committee will check, control and supervision of the administration quality of food. The document is very important to support them.

Especially, CAR (Corrective Action request), the request to modify and record to protect problem about quality system that may occur.

In addition to help staffs remind detail of ingredient and how to storage such as detail of ingredients, document will help to remind expiry date, date of produce, and appropriate temperature to storage. Grand Mercure Fortune Bangkok has all documents about these.

The current food safety management system

Finding 2: This hotel follow ISO 9001 that shown they apply HACCP in their food operation which pay a lot of attention in quality and customer satisfaction to decrease risk and complaint.

ISO stand for International Organization for Standardization, it is standard system which built quality service and meet demand of customers. The relationship between ISO and HACCP, ISO is a Food Safety Management System that includes Hazard Analysis and Critical Control Points (HACCP) to earn more effective result. However, it also includes other management system processes that work together to control food safety throughout the organization.

The head of bakery kitchen said that “Grand Mercure Fortune Bangkok certified ISO 9001 more than 3 years and they continually practice follow the principle of ISO. They pay attention in quality of service and customer satisfaction”, it can be seen from the quality policy of hotel are;

- 1) Plan and Practice follow demand of customer, legal and regulation which change all the time to increase customer satisfaction.
- 2) The top management must be discuss and respect each other, open mind, honest to create vision and stable.

- 3) Elevate the image of the service and facility to make customers have satisfaction and friendly with environment and community.
- 4) Have team work and proudly together both success and fail.
- 5) Development system accordance with international standard ISO 9001 to raise level of hotel to be accepted in domestic and international.

In addition the hotel has the principle to practice accordance with ISO 9001 that is the way to get quality into food operation by PDCA. P from Plan, define goal and process of operation which have an effective to meet demand of customer follow the quality policy. D from Do, practice follows the standard and process that already define (record in document in each process to follow and check). C from Check, follow and measure according the quality policy, regulation and report. A from Action, development and find the better way to work in step. PDCA is like the principle of HACCP and need to consider the seven principles of HACCP in every step to earn more effective result in quality of food.

The hotel established goal and code of Food and Beverage department according to ISO 9001 for guiding staff to practice and follow to reach the goal of ISO. KPI stand for Key Performance indicator, it is standard measure that staffs always consider to reach the goal of department follow ISO.

Code KPI-53-12 (FB), the goal of Food and Beverage is decrease number of complaint from customer in each outlet. Not more than once a month.

Code KPI-53-13 (KT), the goal of Kitchen is decrease number of complaint about food quality and taste from customer. Not more that once a month.

Code KPI-53-14 (FB), the goal of Food and Beverage is earn 100% of revenue follow plan.

Code KPI-53-15 (Stw.) the goal of Steward is decrease damage, remain 0.5% of food revenue.

KPI-53-16 (KT) the goal of Kitchen is clean kitchen and waterspout, each kitchen can fail not over 4 times per month.

All staffs in kitchen and other department gain good knowledge about ISO 9001, it can be seen from in every kitchen have the quality policy, the way to practice and the goal of ISO 9001 on the wall. All respondent said that “the head of each kitchen try to communicate and up-to-date the new about food safety and hygiene follow the ISO for staff in their kitchen and people involved.” The responsibilities of staffs in ISO is follow the quality policy and the KPI (Key Performance indicator) goal of both hotel and department that shown they must be know well about how to use equipment, how to measure the quality, and how to prevent and develop the problem in job by use CAR (Corrective Action request), the request to modify and record to protect problem about quality system.

Finding 3: Four stars hotel that applying HACCP have good standard in food operation and have an effective food safety system those increase reliability of customer. For preparing themselves to be 5 stars hotel.

As the chef said that “Grand Mercure Fortune Bangkok, they would like to have standard quality of food and operation in the same level with 5 stars hotel to increase reliability of customer to make decision to get food and service from hotel.” In addition, applying quality system also help the hotel increased the revenue of food from increase number of customer and reduce waste food. Especially, they have planned to be 5 stars hotel in the future, it necessary to apply.

Another hotel in the same area such as The Emerald hotel, also applying the HACCP in their food operation. The Emerald Hotel is 4 stars level and they would like to have very good quality standard in their food operation.

Table 17: Sample HACCP plan for hot meat dishes in The Emerald Hotel

Sample HACCP Plan for Hot Meat Dishes in The Emerald Hotel								
Process Step	Hazard	Preventative measures	CCP	Critical Limit(s)	Monitoring Procedure		Corrective Action	Record
					What	When		
Cooking	-Insufficient cooking allows survival food and poisoning bacteria and spore	-Follow personal hygiene standard procedures for cooking	Yes	Cooking meat dish to an internal minimum 74C for least 15 second	Measure internal temperature using a sanitized probe thermometer	Each batch	-Continue cooking until meat dish reaches an internal minimum temperature of 74C for the least 15 seconds. -Review standard procedures. -Retrain staff	Cooking/ Chill temperature monitoring record
Cooling	-Multiplication of any surviving food poisoning bacteria and their spores	-Follow standard procedures for cooling	Yes	Cool to 4C within four hours in a shallow container or blast chill	-Measure temperature using a sanitized probe thermometer -Measure the air temperature in the refrigerator	Each batch	-Re-heat to 74C for 15 seconds within two hours, then re-cool -Review standard procedures -Retrain staff	Cooking/ Chill temperature monitoring record

Reheating	-Multiplication of any surviving food poisoning bacteria and their spores -Toxin production	-Follow standard procedures for reheating -Follow personal hygiene standards	Yes	Reheat rapidly until meat dish reaches an internal temperature of 77-82C for at least 15 seconds within two hours	-Measure temperature using a sanitized probe thermometer	Each batch	-Continue reheating until meat dish reaches an internal temperature 77-82C. If temperature is not reached within two hours. -Discard -Retrain staff	
Hot holding and serving	-Multiplication of any surviving food poisoning bacteria and their spores not killing by cooking -Re-contamination of meat from equipment/food any added ingredients such as garnishes and condiments	-Follow standard procedures for hot holding and service -Follow personal hygiene standards -Follow standard procedures for cleaning and sanitation -Follow standard procedures for equipment performance and maintenance	Yes	-Hold in equipment operating at a temperature of 63C or above -Only use clean and sanitized garnishes and condiments	-Measure temperature using a sanitized probe thermometer every two hours	Each batch	-Discard -Retrain staff	Holding and displaying temperature log

From the table sample of HACCP plan of The Emerald hotel, they focus on biological hazards only. Also in Grand Mercure Fortune, they have the HACCP plan for hot meat dishes are not different. They have the same standard in food operation. Understanding the emerging risk inherent in the preparation and handling of food and embracing the principles of HACCP will ultimately help you to protect not only your customers but yourself, your business (or your employer's business) and the reputation of the Thailand hospitality industry, Remember Prevention is better than cure.

Apply HACCP in food operation

Finding 4: Grand Mercure Fortune Bangkok is ready to apply HACCP in their food operation but not complete.

In Thailand, HACCP is voluntary system but need official from Bureau of Quality and Safety of Food Department of Medical Science inspect the food operation in hotel. They will check in each process both document and practice. Prior to inspection hotel, they must be check that hotel get GMP (Good Manufacturing Practice) in A or B level. Although, the hotel has good standard follow the ISO 9001 or principle of HACCP system but still need to pass GMP which most of food handler and staff in kitchen didn't have knowledge. It is difficult if the hotel does not get effective training and good communicates to them.

In case of Grand Mercure Fortune Bangkok, the respondents said that "there is document to record follow the ISO 9001 but it is not complete for the HACCP." The document of ISO 9001 is about the plan, policy, process of operation, and record follow the standard of ISO which emphasize in quality. For HACCP document must be record in each point that food hazard can be occur to control and prevent food hazard. It shows that HACCP document will have more detail about critical point and food safety process.

Head of main kitchen mention that “The staff is not enough, sometime cannot gain effective in food safety system. For example number of steward in hotel is not enough when compare with their work.” Those make staffs have hard workload, may be they cannot follow and strict their responsibility because they need to run their work on time. It is very hard to find out steward at the present because the level of salary is very low and work hard. Sometime the hotel hire casual but they do not have effectively work because they do not have skill.

Another recommendation of Head of cold kitchen, he said that “The hotel do not have effective training about food safety system and hygiene, although head of each kitchen have good c ommunicated with staffs in their kitchen about how to practice and basic of food safety system but effective training is still important.” To get the effective result from food safety system, effective training is very important even thought staffs have good knowledge in basic of food safety and hygiene. Training will be support head of each kitchen to

From above can define that Grand Mercure Fortune Bangkok is ready for HACCP system but does not complete because they do not pass inspection from Bureau of Quality and Safety of Food Department of Medical Science. This organization will get certificate for hotel if hotel pass the standard inspection from them.

Finding 5: Appling HACCP in food operation made an effectively food safety system to decreased risk in food operation and increased confident of customer.

The ISO or the HACCP is the standard food safety system that manages risk in food operation. Appling standard food safety system in the food operation will decrease the risks which make the hotel lost the profit and reputation in food. The risk and food borne illness factors that may occur in food operation and the HACCP can be control as the follow;

- Food from unsafe sources
- Inadequate cooking

- Improper holding temperatures
- Contaminated equipment
- Poor personal hygiene

All respondents said that “the HACCP system is very useful in food operation. Applying this system to have an effective food operation according regulative and can be measure the result of system to be develop in each process in the future. Especially, the HACCP system helps to increased confident of customer about quality and safety food in hotel.” Nowadays customers have a lot of knowledgeable in food safety and protection of customer right. They have several choices and try to compare to find out the best thing for themselves. For food and hospitality industry, the quality and food safety is the first factor that the customers use to support their decision to get service. All chefs said that “providing that hotel apply the international standard food safety system such as ISO or HACCP can guarantee the standard and quality of food and service in hotel. Also make customer feel more confident to get food and service.” The trust of customers supports them to make decision to go first time after that they will return to get more food and service. Then they will have royalty and recommendation other guest to use service, like a word of mouth.

Although the HACCP system has a lot of benefit, it also has the burden. The main burdens of HACCP of Grand Mercure Fortune Bangkok are cost and document.

- Grand Mercure Fortune Bangkok was established more than 20 years that shown the equipments and place are old fashion along the age of hotel. According to the principle of ISO or HACCP, the equipment must be change such as pot or cutting board, if have the dents or scratched must be change immediately which use large cost when change all kitchen in hotel. For example head of bakery said that “the large equipment for bakery such as hit flour machinery that was used more than 20 years. It is very large cost to change new one. Another equipment such as refrigerator to cold hold or storage cake and bread”

- Document in the HACCP is very important. In each process in food operation need document to support. All respondents said that “this is very difficult to staff in kitchen to follow because some of them have low education and do not understand the document. During the day, they have a lot of work follow their schedule and responsibilities those make them disgusted to learn document. But they are practice follow the principle of ISO by automatically and pass the burden to other staff who higher education to do this responsibility.”

4.2.2 Summary the result of interview

Grand Mercure Fortune Bangkok would like to have standard in the same level with 5 stars hotel and would like to be 5 stars in the future. They try to prepare themselves by put the international quality standard into their food operation to increase confident and reliability of customer which very important in hospitality industry. Nowadays, customers have a lot of knowledge of hospitality industry and pay more attention in quality, health, and hygiene that make hotel must up to date information and the way to make them confident to get service from hotel and return.

The HACCP is the new food safety system in hotel industry because it always use in food product before. And also new for Grand Mercure Fortune Bangkok, normally they apply the ISO 9001 into their food operation to preparing and cooking quality food for customer. It can be explained that they have HACCP system in each process of food operation but they didn't pass the HACCP because they didn't have well prepare document. They complete document for ISO 9001 but it is not cover the HACCP system which deeper detail in food than ISO. Other problems of hygiene and food safety are the steward is not enough in rust hour and they have less training about food hygiene. Even though they have good knowledge about basic of food safety and hygiene but they still need effective training to get more information, repeat the knowledge and support head of kitchen.

CHAPTER 5

CONCLUSION

This chapter will provide a brief summary of the study, relate the findings to prior research, and suggest possible directions for future studies.

5.1 Conclusion of the study

The goal of this research is to study the current situation of food safety system in 4 stars hotel that they have standard operation and safety for customer. In this paper, will focus on the HACCP which is the food safety system that accept around the world. The sample of this research is staff in kitchen of Grand Mercure Fortune, there are 38 respondents came from questionnaire and 5 respondents from interview.

In part of quantitative method, the researcher would like to find out about the knowledge and attitude of staff in each kitchen. The results of the data show that the respondents have good knowledge in basic of food safety system and hygiene. They practice follow the principle of food sanitation and HACCP. For their attitude about food safety system, the respondents have good attitude in food safety and hygiene in the same way; it means they have same standard performance in food safety and hygiene. They think applying HACCP in food operation help to reduce food contaminate, food born, and cost of raw materail in kitchen. From the result shows that each kitchen has the same outcome of applying food safety system. That can be explained that every kitchen have the same standard to practice and follow. The staff of each kitchen has good communication from head of each kitchen because the hotel has less of training about food safety and hygiene.

For qualitative method is about the current situation of food operation and food safety system, it can determine in five finding as the follow;

Finding 1: Grand Mercure Fortune has good standard in food operation in each process follow the HACCP, there is lack of complaint about food quality or food borne illness from their customer. In each process, there are quality policy follow ISO 9001 and the staffs have good basic of food safety and hygiene from the communication with the head of kitchen. The head of kitchen have an effective to communication and control their staff. From the quantitative data staffs in every kitchen have the same way to practice to get safety food. It mean the hotel have the good standard quality policy which staff understanding and rigorous practice.

Finding 2: This hotel follow ISO 9001 that shown they apply HACCP in their food operation which pay a lot of attention in quality and customer satisfaction to decrease risk and complaint. HACCP is one part of ISO, it support ISO to analysis the critical control point to get effective food safety and hygiene. All staffs in kitchen have good knowledge about ISO 9001, the head of each kitchen try to communicate about food safety and hygiene follow the ISO for staff in their kitchen and people involved.

Finding 3: Four stars hotel that applying HACCP have good standard in food operation and have an effective food safety system those increase reliability of customer. For preparing themselves to be 5 stars hotel. To increase reliability of customer to make decision to get food and service from hotel. It also help the hotel increased the revenue of food from increase number of customer and reduce waste food. For the principle of HACCP will help the hotel to protect both customer, hotel, staff of hotel and the reputation of the Thailand hospitality industry, Remember Prevention is better than cure.

Finding 4: Grand Mercure Fortune Bangkok is ready to apply HACCP in their food operation but not complete. There are the documents follow ISO 9001 but it is not complete in part of HACCP system, they need to add more documents in some process such as purchase and check critical control point in each process. Other recommendation from respondent are staff is not enough and lack of training.

Finding 5: Applying HACCP in food operation made an effectively food safety system to decreased risk in food operation and increased confident of customer. The HACCP

system is very useful in food operation to manage risk which may be occur in food process. To gain effectively food safety and hygiene, applying HACCP is necessary. In addition, it helps to increase confident of customer about quality of food in hotel. Nowadays have regulation about protection of customer right and customers have a lot of knowledgeable in food safety. The customers have several choices to compare and find out the best food and service. In food and hospitality industry, the quality and food safety is very important. It is the main factor that supports customer decision. The food safety system such as HACCP and ISO can support and guarantee that hotel or restaurant have very good standard of quality food. If they go into hotel or restaurant must be get very good food and service.

5.2 Recommendation

Grand Mercure Fortune Bangkok have standard in food operation but they did not pass HACCP system because they do not have well prepare document to support the system which is important for HACCP. Other problem about hygiene are there is less effective training about HACCP and stewards is not enough in rush hour which is difficult to follow schedule and standard practice in food safety system. To solve these problems, the researcher has the recommendations as the follow;

First, to pass inspection from Bureau of Quality and Safety of Food Department of Medical Science, Grand Mercure Fortune Bangkok should be manage and prepare document of HACCP system. Document is very important in HACCP system to check and records in each process that hazard can be occurred. Records are the easy way to keep up to date as they provide evidence of operation in every process. The Bureau of Quality and Safety of Food Department of Medical Science will consider from document and record of hotel to check that hotel pass the standard of HACCP system or not. The hotel must good prepare document and usually do it to get more effective in HACCP system. To pass standard and get certificate from the Bureau of Quality and Safety of Food Department of Medical Science should be get the document and record as the follow;

- The document that list all of the hazard analysis in each process of food operation which need to control and monitor. This will done in planning process, must be careful to add detail in the document because missing some information will decrease the effective of system. The detail which necessary in this document are step, hazard, control measure, critical control point, critical limit, monitoring procedure, corrective action, and record. This document can help HACCP team define their responsibility in each step and plan how to operate follow HACCP. (Appendix 1)
- Receiving Deliveries records, this document ensure that all food is received fresh and safe when it enters the foodservice operation and to transfer food to proper storage as quickly as possible. It helps check the interior temperature of refrigerated trucks. Confirm vendor name, day and time of delivery, as well as driver's identification before accepting delivery. Check the cleanliness of crates and other shipping containers before accepting products. Reject foods that are shipped in dirty crates and do not pass the standard or agreement. (Appendix 2)
- Staff hygiene and work rules, this document will explain about the regulation which staff in kitchen must be follow to meet the goal of food safety and hygiene. It also explain about the basic principle of food sanitation and hygiene which all staffs in kitchen need to follow such as washing hand, do not wear strong perfume, Smoking in a food room is prohibited, and etc. Those can make food contaminate and risk in food operation. The staff hygiene and work rule document must let all staff read and aware before start work with hotel. Signed acknowledgement is necessary. (Appendix 3)
- Staff training record use to check that staffs already get training in each subject or not, an effective training in food safety and hygiene is important to HACCP to let staff have good knowledge and understanding the system well. Training is necessary for all staffs but in kitchen they have a lot of work follow their schedule and someone think it waste time. To success their goal, the staff training record is very useful. (Appendix 4)

- Employee medical questionnaire, this document will use when candidates pass interview to check their health before start work at hotel. Human is direct carrier if they have infection during work, disease can spread to food that they prepare and cook. This document will help to check them before accepted and prevent food risk. The staffs' sickness will increase food risk in food operation. (Appendix 5) And another document that help to check staff's health after they work in hotel is staff sickness record (Appendix 6). The details in this document are name of staff, illness, date sick, and the date returned to work.
- Cleaning schedule, details in this document are clean up day, the area and equipment was cleaned, the cleaning material or how to clean, the method to clean, the name of cleaner, the name of checker and their remark. This will help HACCP check the hygiene and cleanness of place and equipment in hotel are well cleaned and storage (Appendix 7). In addition for hygiene in place is pest which is the big problem about hygiene. The hotel should have the pest control monitoring record (Appendix 8) that will help hotel monitor and check pest in each area where it can be hidden. The details in this document are checked date, the area, the signs of infestation from pest, the action from the people who have responsibility and their signature.
- Maintenance record log, this document was used to monitoring the equipment and tool which concern with their responsibility the staffs should be careful and monitoring. The equipment unmaintained may be made food contaminate during preparing and cooking. The details of this document are date of inspection, area or equipment detail, maintenance performed, date due for next inspection, and signature of inspector (Appendix 9).
- Cooking log, this document is record to check the temperature during cooking. Temperature is main factor that make waste food and increase risk food. Therefore checking temperature is necessary to decrease the waste food and serve safety food for customer. In the other hand the food will serve in the appropriate temperature that helps to increase the satisfaction of customer. The

details of this document are date, time, kind of food, measure point, temperature when measure, action taken if temperature too low, and the signature of checker (Appendix 10).

- Fridge & Freezer temperature record sheet (Appendix 11), this document will support to check the temperature in each kitchen, it has the right temperature and still working. The temperature of all refrigerators and freezers should be checked at least once every day. A separate record should be kept of any routine servicing or repairs which are carried out. The details of this record are cabinet, target temperature, remark or action in every day. Storage temperature record (Appendix 12). This document is likely fridge & freezer temperature but different in the raw material that storage and temperature.

The second problem is about training, all staffs in kitchen have good basic knowledge of food safety and hygiene but training is still necessary for them to acknowledge and get up to date information. The success of HACCP system depends on educating and training that get to staff about the important of food safety and hygiene. First the staff must well understand what HACCP is and know about the skills to support the HACCP system in rigorous follow the principle of food safety system. The hotel should set internal and external training about hygiene for all staffs in kitchen. The hotel should set hygiene training team which has responsibility to train other staffs about hygiene. The hotel should be have hygiene training every two month from internal hygiene training team about basic of hygiene that all staffs must be use in their responsibility and twice a year from external hygiene team from the Bureau of Quality and Safety of Food Department of Medical Science to get deeper information about HACCP system.

Another problem is steward is not enough in rush hour. This problem is not big problem but have effect to an effective of food safety system. Sometime cook helper must wash dish, wash equipment, and move equipment by themselves in rust hour. The cook helper must give the hand to help steward. The hotel would like to hire more but difficult to find out the candidate in this position because low salary and there are a lot hotel at the present. To solve this problem, should be done as the follow;

- The hotel should be hire casual or part time to work in rust hour from both internal and external of hotel to support permanent staff. Using casual staff will decrease the quality of work because they do not have experience and skill. But it can solve immediately problem.
- Have training cook helper, waitress, and waiter about basic to manage dirty dish and garbage. When waiter and waitress clear table, should be clear garbage from dishes and equipment. Then classify the equipment to decrease step to wash to help steward and cut time. Also for cook helper should be do the same way after cooking and preparing must be clear garbage and classify equipment.
- The hotel should have a good planning about number and kind of equipment that must be used in each day. The head of steward, manager outlet, and head of each kitchen should have good coordinator about number of reservation of restaurant in each day to well prepare and plan number of equipment such dishes, bowls, forks, spoons, cup, glass, and etc. Should be preparing in sufficient and right equipment in each period during the day. Try to update detail of menu and function every day to be change immediately.
- Finally, if cannot find out candidate, the hotel should be increase salary or welfare to attract candidate but using this way will have impact to other position. May be must up grade structure of salary which increase large cost of hotel and difficult to do.

5.3 Limitations

The staffs in kitchen has low education, some of them cannot read and understand the question of questionnaire. That makes them avoid participating in this research. In addition limitations about staffs are a lot of work in their schedule. All staffs have several responsibilities to do during the day; it is very difficult to answer 50 questions from the questionnaire. They would like to concentrate in their work because quality of food is very sensitive, must be carefully in each process. The food contamination and food born can be occurring all the time. Complete the questionnaire

is waste time for them. At the period of distribution the questionnaire, there is seafood festival of hotel. The hotel gets reservations about 100 persons for dinner every day those make staffs are very busy during the day.

Grand Mercure Fortune Bangkok is the international chain, it is difficult to find out the document about food and hygiene. Staffs disclosure some information such as the customer satisfaction questionnaire and other document about food and hygiene. For interview, in some question the staffs cannot answer the question such as the problem about food quality or complaint from customer.

5.4 Implication of finding

This research aim to study current situation of food safety system and hygiene in four stars hotel. In addition try to find out are they applying HACCP in their food operation. The result of this research can be used in every the industry that concern with food and hygiene such as the restaurant, hospital, street food, and etc. HACCP can be applied to all businesses throughout the food chain and forms the basis of a proactive food safety management system. When effectively implemented, HACCP will control biological, physical, chemical and allergen hazards within a food operation. It is important to check and control the hygiene that guarantee consumer will be safe and food borne do not happen.

The food chain such as fast food chain and other international food chain, HACCP system is necessary to make consumer confident in their product and service. In the other hand, if food borne and decease were occurred in their chain even only branch. It is very big problem of them and difficult to manage. In globalization the news spread quickly more than past by social network. That will decrease reliability of consumer and avoid getting product or service from these chain. Also in small food business such as small restaurant, vendor, and street food. The small food business can be use the principle of HACCP to manage their food operation to avoid food contamination, disease and reduce cost about waste raw material.

In the hospital, hygiene and sanitation are important because they need to pay more attention in health of their customer (sickness). The sickness will sensitive with disease and food contamination which make them worse. It can be seen that HACCP is necessary to their food operation. The economic was growth and people pay more attention in their health, the HACCP system will preventive risk in food safety management system, in hospital catering, could contribute to the production of safe food and to the avoidance of a significant high amount of financial costs

Moreover, The HACCP system have important role to check and control quality of food import and export industry. Applying HACCP in every food business level, it will be good effect with the healthy and sanitation of consumer both in and out country. It allows consumer get safety food and also reduces waste in economic such as expand of nursing from food borne and disease. The organization that applying HACCP and certified will use it to promote their organization. It can support the image of organization and increase reliability in their product and service.

5.5 The future study

The future study suggested here will provide that they should get deeper and variety information. It will make the research more effective. In this paper, the researcher would like to get more information from the agent of Bureau of Quality and Safety of Food Department of Medical Science but the system to contract the government is many steps and difficult to contract which use long time. If you would like to interview and get some information should be make appointment in advance more than 4 weeks. The information will make the research more effective. Reference person is more reliability.

In part of questionnaire, the researcher should be use triangulation method with staff in operation level (questionnaire, interview, and observation in the same group) to select the data. It will help to gather the effective information from the respondents. The observation will help the researcher see the real picture about the way their practice, the overall of food operation, and the way to solve the problem. Excepted

interview and questionnaire for the staffs in kitchens may be use the customer satisfaction questionnaire and complaint from customer to be the material to analysis. It will help the researcher know both information from staffs in kitchen and customer who get service. It will increase more reliability and effective information.



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Appendix A

QUESTIONNAIRE & INTERVIEW QUESTION

Questionnaire

HACCP and Food Sanitation in Kitchen

Introduction: Please answer the question as truthfully and accurately as possible. Check or mark the appropriate box for each question and write answer in space provided. All answers are confidential and complete anonymity is assured. Your participation is voluntary and will help us greatly. Thank you.

Research Question: To identify food system in hotel especially HACCP and food sanitation. Survey Staff's attitude of food safety are they understand or not and how do they apply both HACCP and food sanitation with food operation in their hotel.

Part I: Demographic of research

Gender			
<input type="checkbox"/>	Male	<input type="checkbox"/>	Female
Age			
<input type="checkbox"/>	15- 25 years	<input type="checkbox"/>	26– 35 years
<input type="checkbox"/>	36– 45 years	<input type="checkbox"/>	46– 55 years
<input type="checkbox"/>	56– 60 years	<input type="checkbox"/>	
1. Education level			
<input type="checkbox"/>	Under High School	<input type="checkbox"/>	High School
<input type="checkbox"/>	Certificate/ Diploma	<input type="checkbox"/>	Bachelor Degree
<input type="checkbox"/>	Higher Bachelor	<input type="checkbox"/>	
2. Kitchen			
<input type="checkbox"/>	Coffee shop Kitchen	<input type="checkbox"/>	Cold Kitchen
<input type="checkbox"/>	Bakery Kitchen	<input type="checkbox"/>	Thai Kitchen
<input type="checkbox"/>	Main Kitchen	<input type="checkbox"/>	Japanese Kitchen
<input type="checkbox"/>	Chinese Kitchen	<input type="checkbox"/>	Other.....
Position			

Part II: Knowledge and Understanding in food safety system (HACCP and Food sanitation)

Which food system do you know? (Can answer more than one)			
	HACCP		ISO
	Food sanitation		GMP
	5S		
Does your hotel apply HACCP system in food operation?			
	Yes		Not sure
	No		
Can you explain about the principle of HACCP in your hotel?			
	Yes		Almost
	Almost not		No
Do you know the process of HACCP in your hotel?			
	Yes		Almost
	Almost not		No
Do you know which the critical point which needs to control is?			
	Yes		Almost
	Almost not		No
Does your hotel apply food sanitation in food operation?			
	Yes		Not sure
	No		

To decrease food contamination, what should we do first before preparing, cooking and touch food follow principle of food sanitation?			
	Wash hand		Take a bath
	Wear rubber or plastic gloves		Wash equipment

Part III: Attitude about food safety and hygiene follow HACCP and Food sanitation.

Questions	Strongly Disagree	Disagree	Agree	Strongly Agree
Do you think food safety is important for hotel?				
In your opinion practice of food handler and staffs in kitchen have effect to food safety in hotel?				
Do you think knowledge of food handler and staff has effect to food safety in hotel?				
Do you think food safety training is important for food handler and other staff?				
Do you think apply HACCP (ISO) in food operation make an effective in food safety?				
Do you think understanding in food sanitation make an effective in food safety?				
Do you think all of food handler and top manage need to practice follow principle of food sanitation to decrease food borne?				
In your opinion, do you think HACCP (ISO) and food sanitation support each other? If using both food operations, it will be easy to success in food safety.				

Part IV: Applying HACCP and food sanitation in hotel.

Questions	Never	Rarely	Often	Always
Does your hotel have team to check quality and food safety in each process of food operation?				
Does hotel has check process of food operation in each step which hazard may occur?				
Does hotel has specified the critical control points (CCPs)?				
Does hotel has settled critical limit(s) to settle standard within the measure working to guarantee that the hazard is controlled reduced or removed?				
Does hotel has settled a system to monitor control of the Critical Control Points?				
Does the HACCP (ISO) team has followed when monitoring process met a critical limit has problem and establish up to date corrective actions to solve it?				
Does hotel has settled procedures for verification to ensure that the HACCP (ISO) have an effective or need to be developed.				
Does hotel has documentation concerns all procedure and record keeping in every process of food operation?				
Do food handlers have checked by Human Resource Department that they are healthy before start work? They do not have infection which relate to food contamination.				
Does hotel has training about food safety and food sanitation?				
Does hotel has policy about health of food handler? ; do not allow them to touch food (preparing and cooking) until become healthy when they are illness or infection.				
Does hotel has very good reparation, convenience and cleanness in location to preparing, cooking and sales?				
Does hotel has good process to wash, clean and storing equipment follow sanitary?				

Does hotel has use good quality of raw material and ingredients from dependable supplier and good storing?				
Does hotel has the policy about control, monitoring and disposal pests in kitchen and restaurant?				

Part V: Outcome of using HACCP and Food sanitation.

Question	Strongly Disagree	Disagree	Agree	Strongly Agree
Hotel applies HACCP in food operating				
Did foods have high quality and safety in every dish?				
Did food handlers, head of kitchen and top manager have reliability that their food will be safety for customer?				
Did hotel has reduce food contaminate and food borne?				
Did hotel have reduced cost in kitchen such as raw material?				
Did staffs that associated with food have knowledge about HACCP and follows strictly?				
Hotel applies Food sanitation in food operating.				
Did foods have high quality and safety in every dish?				
Did food handlers, head of kitchen and top manager have reliability that their food will be safety for customer?				
Did hotel has reduce food contaminate and food borne?				
Did hotel have reduced cost in kitchen such as raw material?				
Did staffs that associated with food have knowledge about food sanitation and follows strictly?				
Hotel applies HACCP and Food Sanitation together				
Did foods have high quality and safety in every dish?				
Did food handlers, head of kitchen and top manager have reliability that their food will be safety for customer?				
Did hotel has reduce food contaminate and food borne?				
Did hotel have reduced cost in kitchen such as raw material?				
Did staffs that associated with food have knowledge about HACCP and food sanitation, and follows strictly?				

Interview question

- How do you design to launch menu? What is factor that support decision?
 - How to select raw material and ingredient for your menu?
 - How do you check raw material to be good quality every day? Do you have document to check?
1. How hotel manage quality of food and food hygiene?
 2. What is the principle about food safety that hotel use to practice in food operation?
 3. In every kitchen have the same standard in food safety?
 4. How about process to preparing and storing food in your hotel or kitchen?
 5. Did hotel ever have the problem about food borne, food poisoning or food quality?
 6. How did you manage the problem?
 7. How did you protect this problem or other problem about food safety happen again?
 8. Do you have staff training or communication about food safety?
 9. Does the hotel have the policy about food safety?
 10. Does hotel check health of food handler before work with hotel?
 11. Do you have food safety system in your hotel or kitchen and what it is?
 12. The hotel is managed by C.P Group and Accor Chain, who has responsibility to control or operate food quality and safety? And how they manage?
 13. Did hotel has food safety or food quality team to monitor and control food operation?
 14. When meet the critical controls point of food how the food quality manages it?
 15. Do you think the current food safety system have an effective and how it effective?
 16. Does the hotel have document to check about food quality and who has responsibility to check?
 17. How hotel manage the location of preparing and cooking?
 18. How about washing process which make hotel ensure cleanness and hygiene?
 19. Did hotel has applied HACCP or other safety system?
 20. How your hotel applies the HACCP and Food sanitation into food operation?
 21. How about the process of HACCP and Food sanitation in your hotel?
 22. What are the benefits of HACCP and Food sanitation in your hotel?
 23. What are the burdens of HACCP and Food sanitation in your hotel?
 24. Do you have problem when you apply the HACCP and food sanitation in food operation?
 25. Do you have some recommend and suggestion about food hygiene?

Appendix B

EXAMPLE DOCUMENT TO SUPPORT HACCP SYSTEM

Appendix 1 document list of hazards analysis

LIST							
Step	Hazard(s)	Control Measure(s)	CCPs	Critical Limit(s)	Monitoring Procedure(s)	Corrective Action(s)	Record(s)

Appendix 2 Receiving and Delivery Form

DATE RECEIVED	CARRIER	VENDOR	NO. PKGS	DELIVERED BY	P.O. #	DEL. TO	DEPT.	BLDG.	ROOM#
TO BE COMPLETED BY CENTRAL RECEIVING									

UNIVERSITY OF DAYTON CENTRAL RECEIVING DEPARTMENT
RECEIVING & DELIVERY FORM

RECEIVED BY _____ DATE _____
 X

TO BE COMPLETED BY THE DEPARTMENT & FORWARDED TO PURCHASING WITH PACKING LIST

ORDER STATUS: (Must check one) COMPLETE Check box if this shipment completes the order and send form to Purchasing. (No need to complete section at right unless there is a discrepancy)	P.O. LINE NO. OF ITEM RECEIVED	QUANTITY RECEIVED THIS SHIPMENT	COMMENTS (Is there a discrepancy? Are returning, substituting, reordering, etc.?)
PARTIAL Check box if this is a partial shipment and complete this section for items received in this shipment. Then send form to Purchasing.			
If the list of items received is lengthy, attach a copy of the Department P.O. form or packing Slip and check off the items included in this shipment.			
If there is a discrepancy on the Packing Slip (doesn't match P.O.) you should make notation in comments section.			
If any of the items are to be returned to the vendor you should make notation in the comments section and attach the Accounts Payable copy of the Return Authorization form.			
Contact Purchasing for assistance if there are any questions.	ORDER CHECKED BY _____		DATE _____
RETURN TO PURCHASING WITH PACKING LIST (+4 zip 1664) for payment processing	X		

Appendix 3 Staff hygiene and work rules

STAFF HYGIENE AND WORK RULES

1. Avoid direct handling when preparing or serving cooked ready to eat products.
2. All staff must wear clean overalls and hats when handling food. Overalls and hats must not be worn outside the premises, except when involved with delivery.
3. Staff must not wear watches or jewellery, except a plain band wedding ring and small sleeper earrings.
4. Staff must not wear strong perfume or aftershave.
5. Food and drink must not be consumed in the food preparation areas.
6. Smoking in a food room is prohibited.
7. Hands must be washed thoroughly with soap and water:-
 - Before starting work
 - After breaks
 - After visiting the toilet or on return to the workplace
 - After coughing into the hand or using a handkerchief
 - Before handling cooked meat
 - After eating, drinking or smoking
 - After touching face or hair
 - After carrying out any cleaning
8. Staff must not lick fingers when handling wrapping materials.
9. Staff must not blow their nose, cough or sneeze over food.
10. Hair and fingernails must be kept clean. Nail varnish must not be worn.
11. Staff must inform the manager if they are suffering from vomiting, diarrhoea, other stomach upsets, skin complaints or cuts. Cuts and abrasions must be covered by an easily detectable waterproof dressing e.g. blue in colour.
12. Staff must ensure that raw food does not come into contact with cooked / ready to eat food.
13. Staff must not use the same equipment or working surfaces for raw and cooked ready to eat foods without thoroughly cleaning and disinfecting them first.
14. Staff must protect food at all times from contamination.
15. Keep food containers off the floor.

I have read the Staff Hygiene and Work Rules and agree to abide by them.

Signed:

Date:

Print Name:

Appendix 5 Employee Medical Questionnaire

EMPLOYEE MEDICAL QUESTIONNAIRE

NAME:

ADDRESS:.....

OCCUPATION:.....

1. Have you ever had or been a carrier of:-

- o A food borne disease Yes No
- o Typhoid or paratyphoid Yes No
- o Tuberculosis Yes No
- o Parasitic infections Yes No

2. Has any close family contact suffered from any of the above? Yes No

3. At present are you suffering from any of the following:-

- o Diarrhoea or vomiting Yes No
- o Skin trouble Yes No
- o Boils, styes or septic fingers Yes No
- o Discharge from the ears, eyes, gums or mouth Yes No

4. Please give details of any other medical problems which may affect your employment as a food handler, for example recurring gastrointestinal disorder.

.....

5. Should it be necessary, will you agree to provide such Yes

Nospecimens that may be required by the business to ensure that you are not a carrier of any organism which may affect food?

I declare that all the foregoing statements are true and complete to the best of my knowledge and belief.

Signed:

Appendix 6 Staff sickness record

HACCP

STAFF SICKNESS RECORD

Staff will report to the manager as soon as possible:-

1. If they are suffering from:-
 - o Vomiting
 - o Diarrhea
 - o Septic skin lesions (boils, infected cuts etc. however small)
 - o Discharge from the ear, nose or any other site
2. If any member of their household is suffering from diarrhoea and / or vomiting.
3. After returning from a holiday during which they suffered an attack of diarrhoea and / or vomiting.

DATE	STAFF NAME	ILLNESS	DATE SICK	DATE RETURNED

Appendix 10 Cooking temperature record

HACCP

COOKING TEMPERATURE RECORD

The Food Hygiene (England) Regulations 2006 require hot food to be kept above 63°C. It is recommended that at the end of cooking/reheating, foods such as joints of meat and lasagne should reach a core temperature of at least 80°C.

Temperatures should be measured using a clean (sanitised) probe thermometer.

Two examples are given for reference:

Date/ time	Food	Measurement point	Temp. °C	Action taken if temperature too low	Initials
12/11/95 12.30pm	Roast Beef	End of cooking	65°C	Returned to oven for 20 mins. Probed: 85°C	JC
12/11/95 2.00pm	Lasagne	Servery	70°C		JC

Recommended temperatures for hot food:

At the end of cooking: at least 80°C

During display: at least 63°C

